The Return to Convertibility: 1926-1931 and 1958 - ?

or

Convertibility and the Morning After

> " The study of history, while it does not endow with prophecy, may indicate lines of probability ".
>
> *The Short Reign of Pippin IV*
> by JOHN STEINBECK

Introduction

The " dash to convertibility ", originally envisaged for 1953, finally materialized, as suddenly as belatedly, during the 1958 Christmas weekend. A few days later, the six countries of the European Economic Community were taking the first step on the long road toward full integration of their national economies.

These two events were not unrelated. The British convertibility decision was admittedly hastened to coincide with the French currency reform, and the latter was in turn designed to enable the French to implement their liberalization commitments under the European Economic Community Treaty. Ten other countries followed suit in very short order, thus bringing into force the 1955 European Monetary Agreement and the liquidation of the 1950 European Payments Union.

This cascade of convergent national decisions was widely acclaimed as a new and spectacular demonstration of continued European cooperation in the monetary and economic fields. It unfortunately could also be interpreted in part as an accidental by-product of the deadlock reached, ten days earlier, in the long drawn out negotiation of a Free Trade Area Treaty among all seventeen of the OEEC countries. Vague threats of retaliation against the Six had been brandished by some of the other countries during the hard bargaining of the previous months, if some measure of agreement were not reached by the fateful date of January 1, 1959.

The break-up of the European Payments Union might be a necessary preface to independent national action in the monetary sphere, even though member countries would still be tied in that event — but in a much looser fashion — by their 1955 commitment to link the liquidation of the Union to the simultaneous entry into force of the European Monetary Agreement.

This loosening of European cooperation is all the more disquieting when viewed against the background of the previous return to convertibility after World War I. The new gold standard functioned rather fitfully during the second half of the 1920's, only to be swept away in 1931 by the first gushes of the world depression. Its collapse was blamed by later writers on the incomplete nature of the 1920's so-called " restoration ". The façade of the pre-1914 building had been rebuilt and repainted, but its shattered foundations and crumbling inner walls had received only the most patchwork type of repairs (1).

This criticism held a great deal of truth, but it did not reach far enough and pointed to the wrong conclusion. The words " restoration " and " reconstruction " suggest a mere digging up and dusting off of past institutional forms, regardless of the changes in the economic and political environment in which they have to operate. The nineteenth century monetary standard had been, on the contrary, a highly flexible and adaptable system, whose 1913 version bore little resemblance to the 1816 model. Further evolution and adaptations, rather than a mere return to the past, would have been required to fit it to the needs and conditions of the postwar world.

What was true then is even truer today. The enormous upheavals in economic philosophy, institutions and policies brought about by two world wars and the 1930's world depression have modified radically the conditions under which international convertibility can be meaningfully defined and realistically made to work today. The negative implications of this statement are only too well perceived by the 1958 planners, just as they were by their forefathers in the 1920's. The reservations and qualifications surrounding the new convertibility decisions (2) make it abundantly clear that no

(1) See particularly W. A. Brown, Jr., *The International Gold Standard Reinterpreted, 1914-1934*, New York, 1940.

(2) The new convertibility obviously will not, any more than it did in the 1920's, reintroduce internationally acceptable gold coins into the national monetary circulation of the

country is prepared to subordinate fully and unilaterally its domestic policy aims and techniques to the maintenance of international balance, and to renounce all recourse to exchange rate adaptations and trade and exchange controls as alternative techniques of balance of payments adjustment.

What is much less clear is the positive content of this " convertibility à la 1959 " and the concrete steps that may preserve it from another collapse " à la 1931 ", when the international economic climate changes once more from good to fair, or from fair to foul.

Two closely interrelated questions seem to me of particular urgency at this time. The first is that of preserving — or restoring — an adequate level of international reserves and liquidity in an expanding world economy, a topic which received a great deal of constructive attention at the recent meeting of the Board of Governors of the International Monetary Fund in New Delhi. It quickly leads, however, into a second and broader issue, on which complete silence was paradoxically, but tactfully, maintained at that meeting, *i.e.* the vulnerability of a world monetary system whose operation becomes increasingly dependent on one or a few *national* currencies as major components of *international* monetary reserves (3).

The same two problems were causing widespread concern in the late 1920's and early 1930's. The Gold Delegation of the Financial Committee of the League of Nations was kept busy for nearly three years, discussing the measures needed to economize gold in short supply and to palliate the most obvious defects of the gold exchange standard (4). Academic economists were equally stirred by these problems and, while disagreeing as always on

convertible countries. It will, even more than it did then, depend very largely on foreign exchange holdings to supplement inadequate levels of gold reserves throughout the world. It will now apply to non-residents, but not necessarily to residents, to current account transactions, but not necessarily to capital movements.

(3) This silence eloquently refutes any hopes that I might have otherwise entertained of having stimulated the interest of the Fund in these problems through my exhortations in *Europe and the Money Muddle* (Yale University Press, June 1957, pp. 295-301).

(4) See these various publications of the League of Nations:

a. *Interim Report of the Gold Delegation of the Financial Committee*, 1930.

b. *Selected Documents submitted to the Gold Delegation of the Financial Committee*, 1930.

c. *Second Interim Report of the Gold Delegation of the Financial Committee*, 1931.

d. *Selected Documents on the Distribution of Gold submitted to the Gold Delegation of the Financial Committee*, 1931.

e. Dr. Feliks Mlynarski, *The Functioning of the Gold Standard*, 1931.

f. *Report of the Gold Delegation of the Financial Committee*, 1932.

technical details and proposed remedies, showed a rare unanimity in their criticism of the latter system. The wisdom of these warnings was, for once, promptly confirmed by the collapse of sterling in September 1931, the wholesale liquidation of the gold exchange standard, and the ensuing aggravation of the world crisis through the spiralling of exchange rate devaluations and of trade and exchange restrictions. In view of this sad experience, the complacency with which we are now returning to the same unorganized gold exchange standard, on an even shakier basis than in the 1920's, is hard indeed to understand. This may be what the Managing Director of the International Monetary Fund, Per Jacobsson, had in mind when he reiterated in several of his recent speeches his favorite warning from Santayana: " Those who do not remember the past will be condemned to repeat it ".

The present article will focus primarily on these major threats to the success of the new convertibility experiment. A second article will then try to define, on the basis of this analysis, some of the reforms that might help adapt present-day convertibility institutions to present-day needs and possibilities.

I. Convertibility: What and How?

Convertibility Yesterday.

The original meaning of the word " convertibility " has been all but forgotten in the discussions of the last ten years. It was indeed closely allied to institutional monetary and banking mechanisms totally alien to those of our days, and one of the main characteristics of which was a large and material overlapping between the national money of each country and that of its major trading partners. Outside of small amounts of subsidiary coinage, the greater part of most countries' legal tender money was in the form of gold and silver coins which would either be accepted at par — or very close to par — by the residents of other countries, or be exchangeable at the Mint for any other foreign moneys needed in international settlements (5). The convertibility problem

(5) The ratio of gold and silver coinage to total monetary circulation, for the world at large, is estimated to have fluctuated between, roughly, 70 and 80 per cent between 1885 and 1913. See the interesting volume of Jacques E. Mertens on *La Naissance et le Développement de l'Etalon-Or*, Presses Universitaires de France, Paris, 1944, Tables 49-53.

was, to that extent, by-passed through the material equivalence of the various national currencies in terms of their gold or silver content. The gradual shift from bi-metallism to a pure gold standard progressively limited the role of silver in this respect, but was accompanied by a parallel shift from silver to gold as the major component of national monetary circulation in all the gold standard countries (6).

The development of bank money, in the form of currency notes and demand deposits, did not at first create any specific convertibility problem. Banks were merely subject to the general obligation of discharging their own debts in legal tender money, *i.e.* initially in the gold or silver moneys of the country where they operated. If an individual bank failed to do so, bankruptcy laws would apply to it just as they would to any other individual or firm. Its own creditors would suffer thereby, but the national currency was left unaffected.

Special " convertibility " provisions had to be enacted, however, in connection with the issue of currency notes when these were granted " legal tender " status by the State. Any debtor could then discharge its obligation to its creditors by tendering such currency notes in payment, but the issuing institution itself could not claim the benefit of this provision with respect to its own I.O.U.'s It remained obliged to redeem or " convert " them upon demand in gold (or silver) coins as defined in the country's monetary legislation.

As long as convertibility was in effect in a gold standard country, it would ensure exchange rate stability with respect to all other gold standard countries. The difficulties which might arise in connection with the maintenance of convertibility, however, were not necessarily related to balance of payments deficits. They might originate as well in an increased demand for internally circulating gold coins, as might occur during a period of boom in domestic economic activity, regardless of the status of the country's balance of payments with the outside world.

A currency became " inconvertible " *de facto* or *de jure* when the issuing institution actually ceased to honor its redemption commitment, or was relieved of it by law. This did not mean, however, that currency holders would thereby be unable to convert it into gold or foreign currencies. They could usually continue to

(6) See Tables quoted in the preceding footnote.

do so, but through the private market and at the rates resulting from supply and demand on that market. The original meaning of the term " inconvertibility " thus had nothing to do with true inconvertibility, in the modern sense of the world. It would be called today " exchange rate flexibility ".

Convertibility Today.

This radical change in the use of the term convertibility is eloquently illustrated by the proposal, so often voiced in recent official and academic discussions, to restore convertibility on the basis of flexible exchange rates, *i.e.* on the basis of what was still in the 1920's the very essence of " inconvertibility ". The explanation of this paradox lies in the fact that several features of the nineteenth century international trade and payments system, more essential than exchange rate stability itself, were then taken for granted, but can no longer be taken for granted today.

The first of these was the freedom accorded to international capital movements. Most modern writers, impressed by the disequilibrating character of " hot money " movements since World War I, would regard such freedom as unessential or even undesirable today. This view was officially sanctioned by the Articles of Agreement of the International Monetary Fund which specifically authorize restrictions on capital movements and even make them, at times, a prerequisite for a country's access to the Fund's resources (7). The discussion which follows will make clear some of my reasons for doubting the practical wisdom of such an approach, and for retaining the freedom of capital movements as one of the basic characteristics of a workable system of international convertibility.

Convertibility is usually identified today with the elimination of all quantitative restrictions on trade and payments on current accounts. This is both too much and too little, too exacting and not sufficiently exacting.

It is not enough, because it leaves out of account tariff restrictions which may, if sufficiently high, unstable, or discriminatory, be even more damaging to international trade than modest, stable and non-discriminatory systems of quantitative restrictions. It is too much, because it makes no distinction between restrictions of

(7) See Article VI, particularly Sections 1 and 3.

this character and the widespread recourse to bilateral trade and payments techniques which may, but do not necessarily, accompany the use of trade and exchange controls in practice (8).

A meaningful definition of convertibility objectives must, of necessity, encompass all alternative techniques through which similar results may be achieved in practice. It must therefore take into account trade as well as exchange techniques of restrictions, and tariff restrictions as well as quantitative restrictions. Carried to its full logical consequences, the definition of convertibility most prevalent today — *i.e.* the elimination of all quantitative trade and exchange restrictions — should therefore lead us to confuse convertibility with the Manchesterian ideal of Free Trade.

Practical policy aims, however, can rarely be enclosed into rigid logical definitions. If we wish to designate as " convertibility " feasible goals of international economic policy, susceptible of concrete implementation in a concrete historical environment, we will have to define convertibility in relative, rather than in absolute, terms. The nineteenth century experience suggests that convertibility be defined as an institutional framework which minimizes the most harmful forms of State interference with mutually beneficial economic relations among sovereign nations. This should imply a maximum degree of multilateralism, stability and freedom in the international trade and payments system, but would not require full and unconditional compliance with any of these three criteria.

The first should probably be regarded as the most crucial, and also the easiest to achieve. Its opposite extreme — bilateralism — marked the utter breakdown of convertibility in the early postwar years. The near elimination of bilateralism after 1950 was primarily the result of the European Payments Union Agreement and of the

(8) Such a distinction is approximated, but no more than approximated, by the line currently drawn between " resident " and " non-resident " convertibility. Convertibility of sterling for non-residents, for instance, means that sterling area residents may remain subject to various degrees of restrictions on foreign transactions, but that current earners of sterling outside the sterling area may use such earnings freely for settlements — at least on current account — not only in the sterling area, but anywhere in the world. This goes very far indeed toward the practical elimination of bilateral trade and payments techniques, but still leaves the door wide open to the application of stringent discriminatory restrictions on sterling area residents' trade with the countries which would otherwise use their sterling earnings in such a way as to expose the United Kingdom to a serious drain on its gold and hard currency reserves. The threat of such discriminatory application of restrictions on residents may be used to exact bilateral concessions or preferences from these countries.

OEEC Code of Liberalization. Yet, both of these Agreements accepted implicitly some degree of discrimination as a price worth paying for the outlawing of bilateralism and the gradual lifting of quantitative restrictions in intra-European trade.

Although non-discrimination should be regarded as one of the pillars of nineteenth century convertibility, it did not operate even then as an ironclad rule in practice. Non-discrimination was then spelled out in the famous "most-favored nation" clause enshrined in most trade and tariff treaties. This clause, however, was subject to a number of qualifications and exceptions. Regional preferences — particularly within the British Empire — were traditionally allowed among some countries closely linked together by geographical, historical or political bonds. Non-discrimination was also tempered by reciprocity criteria in the case of countries — primarily the United States — which insisted on a *conditional* interpretation of the most-favored nation clause. Finally, the clause was also circumvented occasionally through ridiculously minute definitions of tariff nomenclature, designed to limit the benefits of a new concession to one or a few countries only.

Yet, these exceptions remained exceptions. Their overall quantitative impact was moderate, and they never opened the door to any significant extension of bilateralism in international trade and payments. As long as this was true, trade and tariff restrictions protected national producers against foreign competition only within their own country's boundaries. Equal access of all countries' producers to third markets preserved the full interplay of competitive forces among exporters the world over, and forced each country to maintain internationally competitive prices and costs, in order to retain a level of exports sufficient — together with other net receipts or expenditures on service and capital accounts — to finance its own payments abroad for merchandise imports.

It is indeed very tempting therefore to identify convertibility with multilateralism, and as perfectly compatible with a non-discriminatory, or at least non-bilateral, use of tariffs or other trade and exchange restrictions. Yet, this could lead to absurd conclusions as a criterion for international policy. Sufficiently high or unstable levels of non-discriminatory restrictions could stifle trade altogether and be far worse, as a result, than more moderate levels of moderately discriminatory restrictions. Practicable convertibility aims should make room for feasible compromises between the three ideal

criteria of multilateralism, stability and freedom in international economic relations.

For reasons that will soon become apparent, these compromises may have to remain short in every respect of those that could be implemented under nineteenth century conditions. Tariff restrictions were then extremely moderate by modern standards, and quantitative restrictions practically unknown. Most of all, tariff duties were changed infrequently and were often consolidated for long periods of time through trade treaty negotiations. They were used primarily for revenue or protection purposes, but hardly or not at all as a technique for balance of payments adjustments.

Since, however, no country — wether convertible or not — can escape the necessity of balancing its overall accounts with the rest of the world, the maintenance of nineteenth century convertibility depended on the implementation of other techniques of adjustment, alternative to the use of trade or exchange restrictions and of changes in exchange rates. To the extent that these nineteenth century techniques of adjustment may no longer prove workable or acceptable today, new ones will have to be put in their place, or our convertibility objectives will have to be tailored down to less ambitious criteria than those of yesterday. The exploration of these policy issues will be reserved for a later article in this Review.

What Made Convertibility Work before World War I?

What made convertibility workable before 1914, and what made it unworkable in all of the following forty-five years, except for the brief bonfire of the late 1920's?

Theoretical and textbook discussions tend to stress primarily in their answer to these two questions the corrective mechanism of balance of payments adjustments. Classical theory emphasized the role of money flows and their impact upon "corrective" price adjustments and the restoration of a competitive pattern of international prices and costs. Modern theorists have placed greater emphasis on the mechanism of income transfers and their impact upon economic activity and employment, as well as upon prices and costs. Their analysis did not weaken, but strengthened, the classical view as to the effectiveness and equilibrating tendencies of balance of payments adjustments. It raised serious doubts,

however, about the theoretical desirability and practical acceptability of such a mechanism whenever its main burden falls upon economic activity and employment rather than on price adaptations. The breakdown of convertibility after the first world war was thus ascribed to the growing rigidities which interfered with price, cost and wage adaptations, to the consequent impact of convertibility adjustments upon the levels of economic activity and employment, and to the political and social resistance which this would evoke from governments and public opinion.

I have no quarrel with this analysis, but feel that it does not make sufficiently explicit some of the institutional factors which explain the success of nineteenth century convertibility.

One of these has received considerable attention from Taussig and from his students: it is the enormous scope which capital movements gave to the financing and cushioning — and therefore to the perpetuation rather than the correction — of current account disequilibria. Large, persistent and often growing disequilibria showed no sign of, or need for, correction over several decades, or even over the whole century separating the Napoleonic wars from the first world war. The net capital inflow into the United States, for instance, is estimated to have averaged $50 million a year or more throughout the period from 1850 to 1914, while the net outflow of capital from the United Kingdom rose from about $30 million a year in the first half of the century to approximately $250 million in the second half, and close to $900 million in the last years (1906-1913) before the first world war (9).

This did not mean, of course, that all need for *corrective* adjustments was thereby eliminated, and that private capital movements would automatically cushion any trend toward imbalance in a country's international accounts. On the contrary, the availability of cushioning capital on such a scale was very much dependent on the fact that residual deficits — on current *plus* private capital account — could be expected to be corrected relatively promptly and smoothly. Yet, as long as this mechanism functioned, it made it easier for the deficit countries to accept and

(9) These estimates are derived from the *Balance of Payments Statistical Supplement* published in 1958 by the Department of Commerce (p. 10), and from ALBERT A. IMLAH, "British Balance of Payments and Export of Capital, 1816-1913", in *Economic History Review*, 1952, pp. 208-239.

implement such residual adjustments without recourse to trade or exchange restrictions and, in most cases, without recourse to exchange depreciation.

The second factor which explains the successful functioning of nineteenth century convertibility lies in the fact that the emergence of *major* imbalance was *prevented ex ante* by the institutional monetary and banking framework of the times, rather than *corrected ex post* by large price and income adjustments. In spite of the greater flexibility of prices and costs in the nineteenth century, I doubt very much whether a 20 or 30 per cent reduction in wages, if called for to restore equilibrium in the balance of payments, would have been tolerated then any more than it would be today. The fact is that the ability of the system to correct such major maladjustments through internal price and income adaptations was rarely put to a test in the major Western countries which constituted the core of the system. Whenever it was put to such a test — as it repeatedly was in most Latin American countries — the correction was uniformly brought about by currency devaluation rather than by the internal adaptations postulated by the gold standard system.

Price increases and balance of payments deficits are alternative — and often complementary — forms of adaptation to an *ex ante* excess of expenditures over production. Such a gap can arise only if it is financed, and its financing, for a country as a whole, can come only from two sources: net foreign disinvestments by the non-bank sectors of the economy, or net borrowings from the domestic banking system (10).

The first of these two techniques of financing leaves the banking system unaffected and does not, therefore, raise any convertibility problem as such. The inflow of funds from abroad — or the disinvestment of funds previously accumulated abroad — provides, moreover, not only the overall financing of excess expenditures, but also the foreign exchange needed to finance the excess of imports over exports. Moderate price rises would suffice to

(10) The Organization for European Economic Cooperation will publish in the near future comprehensive estimates of postwar monetary developments in the seventeen member countries, in which the type of analysis briefly summarized in the above sentence is fully explained and applied to empirical data. Puzzled readers may, in the meantime, consult my discussion in *Europe and the Money Muddle*, pp. 49 and 53, and in "A Simplified Scheme for the Integration of Monetary and Income Analysis", in Vol. IV, pp. 293-311 of the *Memoria* of the Fifth Meeting of Technicians of Central Banks of the American Continent, published by the Banco de la República, Bogotá (Colombia), 1957.

stimulate such excess imports, and these would, in turn, act as a brake on larger price increases. We have already noted above the enormous role played by such external financing in nineteenth century balance of payments adjustments.

A peculiar form of net foreign disinvestment lay in the financing of excess expenditures from existing cash holdings of internationally acceptable gold — and initially silver — coins. As different from today, a substantial portion of the currency holdings of the public consisted in such international moneys, rather than in fiduciary claims on the domestic banking system. The financing of excess expenditure through such dishoardings of international cash would automatically provide also the foreign exchange needed to finance excess imports and limit the possible extent of domestic price rises.

Convertibility problems could only arise if the financing of excess expenditures were fed by an expansion of bank credit or a contraction of outstanding claims — particularly paper money and deposits — on the domestic monetary and banking system of the country. The difficulties to which such financing could give rise, however, were not necessarily tied to balance of payments deficits, and did not necessarily involve the fate of the national currency as such. They would focus, on the first instance, on individual banking institutions whose rate of credit expansion had been excessive in relation to others, and this could come about regardless of the balance of payments of the country as a whole. The improvident bank might be forced to suspend its payments, but this would affect only the liquidity of its own depositors, and not the currency of the country in general. In most cases, of course, Central Bank assistance would be made available in time to meet the problem, but again not on a scale endangering the liquidity of the Central Bank itself and the solidity of the national currency. The other credit operations of the Central Bank, both with its private customers and with the State, would also be geared to the preservation of its own liquidity position, rather than to national objectives such as the maintenance of full employment, price stability or balance of payments equilibrium.

These financial traditions created, wherever they were observed, the most effective barrier against inflationary excesses susceptible of entailing large-scale price and cost maladjustments. They were, of course, dependent themselves on the predominantly *laissez faire* philosophy of the influential financial, economic and political circles of each country. Occasional departures from these accepted canons of behavior might be forced upon the authorities by foreign or civil war, but were mostly limited to underdeveloped countries not linked politically to the West. Outside of such accidents, the major fluctuations in prices and economic activity were roughly parallel among the major trading countries and required only moderate readjustments to preserve currency convertibility.

The Collapse of Convertibility after World War I

This spontaneous harmonization of internal financial policies has been hopelessly shattered as a result of the two world wars and, even more, of the world depression. New philosophies and techniques of national policies have emerged which subordinate, whenever the two enter in conflict, the preservation of exchange freedom and stability to other and overriding national objectives. These new techniques involve, in the field of trade and finance:

1. the extensive use of the issue power of central banks to underwrite the State's own deficits and, in addition, the credit expansion of other banks whenever such expansion conforms to the wishes, or even merely to the existing regulations, of the national monetary authorities;

2. the unwillingness to subordinate fully such credit policies to the preservation or restoration of a competitive price and cost pattern and of an overall external balance, at current prices and exchange rates, compatible with the availability of gold and foreign exchange reserves;

3. the recourse to currency depreciation, to trade and exchange restrictions, or even to generalized rationing controls, or a combination of such measures, whenever the country is forced by the exhaustion, or near exhaustion, of its monetary reserves to adjust its external expenditures to its external receipts.

The broad consequences of this institutional evolution for the world's trade and payments system have been the breakdown of the gold standard during the interwar and postwar periods, *i.e.* the generalization of exchange instability and of trade and exchange restrictions. The breakdown was a gradual one and culminated

in the unbridled bilateralism of the early postwar years. The disadvantages of such a system, for each country as well as for the international community as such, finally became sufficiently obvious to all to prompt patient and determined efforts to reverse the process and restore freedom and stability in external trade and payments arrangements.

I shall reserve for later discussion the examination of the techniques which have proved most feasible and successful in this respect, and concentrate attention at this stage on the impact of the policies described above on capital movements and the role of monetary reserves.

II. The Changing Role of Monetary Reserves

These radical changes in the international and national monetary and banking systems have fundamentally altered the role of monetary reserves and other capital movements in balance of payments adjustments.

Current discussions of reserve requirements stress primarily the role of reserves in the cushioning of balance of payments deficits, and rely for an approximate, and admittedly very rough, measurement of reserve adequacy on the ratio of a country's overall reserves to annual imports or exchange sales. Such a concept, however, would have been largely alien to nineteenth century writers, and did not indeed play any prominent role in either academic or policy analyses of the problem until the second world war (11). Legal prescriptions on monetary reserves and monetary issues varied widely from country to country, but never made any reference to a country's export or import levels. They were concerned exclusively and directly with the avoidance of excessive currency issues and relied for this purpose either on an overall ceiling on such issues, or on the limitation of fiduciary issues — *i.e.* the amounts that could be issued over and above the metallic reserves held as counterpart by the issuing bank — or on a minimum ratio of reserves to note issues or sight liabilities. This latter criterion was the one that

(11) Its explicit recognition as one of several criteria for Central Bank management was introduced for the first time in Central Bank legislation in 1944. See the author's *Monetary and Banking Reform in Paraguay*, Board of the Governors of the Federal Reserve System, Washington, 1946, pp. 82-84, and 136-37.

conformed most closely to practical bankers' experience as to their own liquidity requirements, and tended more and more to determine legal or customary standards of reserve adequacy. The maintenance of a ratio of about one third between liquid reserves and sight obligations gradually became the usual minimum benchmark for central bank as well as for commercial bank operations.

It hardly need be said this could result in extremely disparate ratios between central bank reserves and the level of the country's imports. This ratio can be estimated, for instance, to have been less than 5 per cent for the Bank of England in 1913, as compared to more than 40 per cent for the Bank of France (12). This contrast was not without significance for monetary management, and complaints were often voiced against the frequency with which the Bank of England had to resort to changes in the discount rate in order to protect its slender level of reserves. The Bank, however, was a private firm, motivated by the search for profits as well as by broader considerations of public service, and showed great reluctance to accumulate non-earning gold assets greatly in excess of liquidity requirements as judged in the light of its own experience in the past. Private capital movements were regarded as the normal source of cushioning for balance of payments fluctuations, and could be hastened, whenever necessary, by open market operations and changes in the discount rate. The main test of this mechanism, from the Bank's point of view, lay in the fact that any substantial drain on its gold reserves could be arrested long before it would endanger the Bank's own liquidity.

The radical changes imparted to monetary institutions and policies by the first world war and the world depression have completely revolutionized the role of monetary reserves and have consequently brought about fundamentally different views as to their measurement and adequacy.

First of all, the universal disappearance of gold coin from active monetary circulation has deeply modified the significance of central bank liquidity. Reserves need no longer be held to convert bank deposits and paper currency into legal gold tender for purposes of

(12) Only a minor portion of this striking contrast is due to the difference in the ratio of gold reserves to liabilities for the two banks (approximately 35% for the Bank of England, and 50% for the Bank of France). Most of it can be ascribed to the much greater role played in England by private bank deposits in total money supply and by the much higher ratio of imports, and lower ratio of money, to GNP in England as compared to France.

domestic circulation. Reserve drains are now associated exclusively with external deficits in the balance of payments of the country. In a closed economy, central bank liquidity would be fully assured by its mere ability to print notes. Excessive issues would be reflected in inflationary pressures upon prices, but would not affect the bank's liquidity.

Secondly, international flows of private capital can no longer be relied upon as a major source of cushioning for current account disequilibria. Fears of currency depreciation and exchange restrictions often indeed tend to stimulate private capital flows from deficit countries to surplus countries, and to aggravate, rather than cushion, the impact of current account imbalance (13). These movements of "hot money" played a particularly large role in the interwar period and continue even today to elude, in many cases, the nets of exchange control legislation. On the other hand, the unprecedented development of official loans and grants provides today vast amounts of cushioning capital, which substitute in part for the private capital flows of the gold standard era. The International Monetary Fund, the International Bank for Reconstruction and Development, the European Payments Union, the European Fund, the Colombo Plan, etc. were specifically set up for that purpose. France and England have also stepped up enormously financial aid to their overseas territories and associated monetary areas. The Marshall Plan and other U.S. foreign aid programs completely dwarfed, in the early postwar years, the rather modest flows of private investments abroad and still account today — even after excluding military grants — for about half of the United States total capital exports.

Official grants and loans, however, cannot be regarded as a normal and dependable source of financing for short-run disequilibria. They usually require long and uncertain negotiations whose ultimate success may also be made dependent at times on political or economic conditions unacceptable to the prospective borrower. In spite of the more flexible and automatic procedures recently developed by the International Monetary Fund — and, up to its recent demise, by the European Payments Union — countries must

(13) International political tensions are a further factor of instability which would continue to paralyze or distort capital flows even if full confidence could be restored in the wisdom of economic policies proper.

still look today to their own monetary reserves as their first and most important line of defense against temporary deficits in their balance of payments.

The main function of monetary reserves is no longer to preserve the overall liquidity of individual central banks, but to permit the financing of short-run deficits in the country's external transactions. The types of deficits which may appropriately be met in this manner fall into two categories. The first is that of reversible deficits reflecting purely temporary fluctuations in foreign receipts and expenditures on current and capital account. Such deficits should obviously be financed, rather than prevented or immediately corrected by policy action. Basic policy adjustments — such as deflation or devaluation — to temporary factors of imbalance would indeed sow the seeds of more fundamental and lasting imbalance in the country's economy. The shortage of reserves is more likely to induce, in such cases, a recourse to trade or exchange restrictions which would have been perfectly avoidable otherwise.

The second case is that of more fundamental disequilibria, calling for corrective action, but in which the most appropriate and desirable remedies will act relatively slowly and smoothly, and leave residual needs for the financing of tapering off deficits.

In both cases, an insufficient level of reserves will force the deficit country to resort to otherwise unnecessary measures of deflation, devaluation or restrictions to keep its payments in closer and more continuous balance with its receipts than would be called for by the need to preserve long-run equilibrium in its international transactions.

III. Reserve Measurement and Adequacy Criteria

These deep-seated changes in the role of monetary reserves entail corresponding changes in their methods of measurement and criteria for adequacy. Neither, however, can be couched in any precise and clear-cut formula, invariant from time to time and from country to country. Reserves have to be higher in an unstable economic and political environment than in a world enjoying a greater degree of economic and political stability. Higher reserves are also needed by underdeveloped countries, with more volatile levels of export proceeds and capital imports, than by the richer

and more diversified economies of the industrial countries. The burden of reserve accumulation, however, in relation to national wealth and savings on the one hand, and competing needs for the financing of developmental imports on the other, will unfortunately be higher for the former countries than for the latter. In this balancing of needs and costs, the underdeveloped countries are likely therefore to assign a lower priority than the more developed countries to a reserve level adequate to eschew or minimize undesirable resort to devaluation or restrictions.

The appraisal of reserve needs for any individual country, at any particular time, would have to take these and other factors into account. The order of magnitude of future deficits calling for reserve financing might first be gauged quantitatively on the basis of past experience. This first approximation should then be revised, upward or downward, in the light of other pertinent evidence about the probable course of external and internal developments (14).

Such a line of approach, however, cannot be used in a broad survey of world liquidity requirements, such as the one which will now engage our attention. Availability of data and simplicity of calculation inevitably dominate the choice of measurement methods applicable to such comprehensive inter-temporal and inter-country comparisons. Their results would admittedly be too crude to determine any precise level of reserve adequacy, but they will prove more than sufficient to indicate whether current and prospective reserve levels are likely to facilitate, or seriously hamper, the smooth functioning of international currency convertibility.

The ratio of gross reserves to annual imports will be retained in all that follows as a first, and admittedly rough, approach to the appraisal of reserve adequacy. The main reason for this choice, I must confess, is the fact that the recent study of the IMF staff on *World Reserves and Liquidity* (15) conveniently presents such ready-made calculations for eleven prewar and postwar years for all regions of the world and for more than sixty individual countries. The

(14) The ratio of reserves to money and other liquid claims on the banking system may be of particular relevance, for instance, if past "compensatory" policies have pushed the ratio of such liquid claims to GNP to an abnormally high level. The current status of private banks' cash reserves and the strength or weakness of the legal or regulatory controls exercized by the monetary authorities over the banks' credit policy will also influence the speed with which corrective action may be applied in case of need.

(15) Washington, 1958.

second is that this ratio is the one that has been most popularized in all postwar discussions of the subject, and that monetary authorities in many countries are apt to think of reserve adequacy in these terms, and to act accordingly (16).

It should finally be noted that the estimates of monetary reserves used in these calculations give an exaggerated impression of definiteness and of comparability over time and over space. Methods of reporting are not uniform in all countries, and, most of all, the true "reserve" character of the sterling assets reported varied considerably over the period. The usability and acceptability of "transferable", and particularly "bilateral", sterling accounts were severely limited in the early postwar years. This was of minor importance to countries normally in deficit with the United Kingdom or the sterling area, but highly significant for countries whose bilateral deficits with other countries — particularly in the dollar area — could not be settled through the use of such sterling balances.

Moreover, the Fund's attempted breakdown of foreign exchange reserves into their major components (sterling, dollar, EPU and BIS claims) can only be regarded as a rough approximation. This qualification, once again, applies particularly to official holdings of sterling, for which estimates have only recently been made available and only for the end of 1945, 1951 and 1957 (in *Economic Trends*, May 1958, p. viii). The Fund's estimates include as official all sterling holdings except those held in the United Kingdom's colonies and in the dollar area.

Important as they would be for a more refined analysis, these qualifications are not too damaging for the broad appraisal of reserve adequacy to which we shall now turn. They will be duly noted again in the few cases in which our conclusions, based on rough orders of magnitude only, could be significantly affected by them.

(16) My own preference would have gone otherwise to a ratio of reserves to balance of payments *receipts* — rather than expenditures — on current — rather than merely merchandise — account, but including also net private unilateral transfers which play an important equilibrating role in several countries' balances of payments. The arguments that may be marshalled for and against this view are not worth retaining the attention of the reader, since the matter is only of academic interest, both methods of measurement leading to similar results in all but very few cases.

Economic students should devote some time, instead, to the closely reasoned and suggestive discussion of reserve adequacy by Tibor Scitovsky in *Economic Theory and Western European Integration*, Stanford University Press, 1958, pp. 101-109.

IV. Reserve Adequacy at the End of 1957

Reserve levels, as of the end of 1957, may be appraised first in the light of past experience and, secondly, with reference to what may be known, or guessed at, of individual countries' own estimates of reserve requirements.

The Overall Historical Record: 1913-1957.

Gold and foreign exchange reserves for the world as a whole were estimated by the Fund at about 49 per cent of imports at the end of 1957, compared with 42 per cent in 1928 and only 21 per cent in 1913; and gold reserves alone to 35 per cent, compared to 32 per cent in 1928 and only 19 per cent in 1913 (17). These estimates, however, exclude gold coin in circulation outside Central Banks and Treasuries. This exclusion is hardly defensible in view of the large role which private gold holdings played before the first world war in balance of payments adjustments. While not directly under the control of the monetary authorities, they often constituted a powerful adjunct to central bank reserves in times of difficulties (18). If gold circulation is taken into account, the ratio of monetary gold to imports shows up in 1957 as about equal to that of either 1913 or 1928 (35 to 36 per cent). This, however, was rather low by previous standards (19), far lower than in the 1930's (about 100 per cent) and substantially lower than in the late 1940's (55 to 60 per cent).

Such comparisons are not very relevant, and this for a variety of reasons.

First of all, foreign exchange reserves have played since the first world war a much larger role in the world monetary system

(17) *International Reserves and Liquidity*, p. 18.

(18) In his study on *British International Gold Movements and Banking Policy, 1881-1913* (Harvard University Press, 1935), W. Edwards Beach draws attention to the high inverse correlation between foreign and internal movements of gold, both in the United States (p. 146) and in the United Kingdom (pp. 76-77). External gold drains in settlement of balance of payments deficits were partly fed and offset by the simultaneous contraction in the internal circulation of gold coin and its reflux toward the Bank.

(19) Spot calculations for the late nineteenth century, based on estimates of the Gold Delegation of the League of Nations, yielded a ratio of about 38 per cent, in 1873, 1880 and 1890, but of approximately 45 per cent in 1868 and 1897.

than they did in the nineteenth century. These reserves consist very largely in the short-term foreign liabilities of the United States and the United Kingdom whose *gross* reserve position in relation to imports can no longer, therefore, be regarded as an appropriate measure of these countries' liquidity. Any average ratio of gross reserves to imports for the world as a whole is highly misleading for that reason alone, and, moreover, totally unrepresentative, because of the excessive weight given to the abnormally high reserves of the United States and the admittedly low reserves of the United Kingdom.

The least objectionable procedure is to consider separately the position of these two countries as world monetary centers, and to confine attention at this stage to the gold and foreign exchange position of countries other than the United States and the United Kingdom.

The ratio of these other countries' total reserves to their imports is just about equal to what it was in 1913, but substantially lower than in any of the other years recorded in Table I.

We may discard immediately as far in excess of minimum requirements the abnormally high ratios of reserves to imports typical of the 1930's. These were indeed the combined result of widespread devaluations and of catastrophic declines in the value of world trade.

We should also discount somewhat the high reserve levels shown for the early years following World War II, since these were swollen by large holdings of inconvertible sterling, which could hardly be regarded as fully equivalent to international reserves. Nobody indeed would suggest that the international reserves position was more comfortable and adequate in the early postwar years than it is today.

The radical institutional changes which have taken place since 1913 and 1928 also preclude any direct comparisons with those years. The fact that current reserves are *lower* than they were then, however, may be retained as significant, since these changes are all of such a nature as would require a *higher* ratio of reserves to imports to facilitate the maintenance of convertibility in the face of a greater variability in national policies and of far less favorable conditions as to the size and direction of capital movements in times of crisis. It should not be forgotten, moreover, that serious worries

about the adequacy of reserves existed also in 1928 and had prompted at the time an extensive investigation by the Financial Committee of the League of Nations (20).

TABLE I

RATIO OF MONETARY RESERVES TO ANNUAL IMPORTS, 1913-1957
(*in per cent*)

	All Countries			All Countries, excluding the US and the UK					
						Foreign Exchange			
	Total	Gold	Foreign Exchange	Total	Gold	Total	Dollar	Sterling	EPU-BIS
Including Gold in Circulation:									
1913	39	36	2	35	32	3			
1928	46	35	11	44	28	16			
Excluding Gold in Circulation:									
1913	22	19	2	20	17	3			
1928	43	32	11	42	26	16			
1932	97	89	8	85	74	11			
1937	100	92	8	55	44	12			
1938	118	110	8	62	51	11	3	8	—
1947	87	61	26	54	19	35	5	31	—
1948	78	55	23	46	15	31	6	25	—
1949	73	55	18	40	16	24	6	17	—
1950	80	57	23	50	19	30	10	18	1
1951	58	42	16	37	15	22	7	13	1
1952	59	42	17	38	16	22	8	11	2
1953	64	45	19	44	18	26	11	12	3
1954	63	44	20	44	18	26	12	12	3
1955	58	40	18	42	18	24	12	10	2
1956	54	37	17	39	17	22	11	8	2
1957	50	35	15	35	16	19	9	7	2

Sources and Notes: see Table in Appendix.

Only one fact need be retained from the record examined up to now. Reserves at the end of 1957 were at an all time low in relation to the last hundred years, and had been declining at a rather alarming pace since the end of 1954. They represented 35 per cent of annual imports for all countries other than the United States and the United Kingdom, taken as a group. Can anything more

(20) See above, p. 5 and footnote (3).

be said about the probable adequacy or inadequacy of such a level of reserves for the maintenance of a workable system of international convertibility?

National Reserve Requirements under Convertibility.

For reasons amply discussed in the first section of this study (21), the appraisal of desirable and feasible reserve levels in relation to imports varies enormously from country to country. In addition to the structural factors mentioned in this discussion and which facilitate or hamper the maintenance of high reserve levels (relative levels of wealth and savings, ratios of bank money to total money, and of money and imports to GNP, etc.), some countries are less able or insistent than others in restraining inflationary pressures and in avoiding recourse to trade and exchange restrictions.

The Fund's study lays great stress on the variations. A series of tables stresses the enormous variations in reserve ratios from country to country as well as from one year to another. In 1957, reserves were only 1 per cent of imports in Bolivia, but 137 per cent in Portugal. The number of industrial countries — excluding the United States and the United Kingdom — with reserves below 30 per cent of imports doubled — from one fourth to one half of their total number — between 1955 and 1957. In the latter year, twenty-seven per cent of the non-industrial countries showed reserve ratios inferior to 20 per cent, as against eight per cent only four years earlier.

These wide variations conceal, however, some broad trends and regularities duly noted in the Fund's report. Thus, a large number of non-industrialized countries unwillingly accumulated abnormally high reserves in wartime, but drew heavily on them for re-stocking and development when supplies became again available. The average reserve ratio for this group of countries thus fell from 73 per cent in 1948 to 37 per cent in 1957. Continental Western Europe, on the other hand, suffered heavy reserve losses in wartime and in the early postwar years, but more than doubled its reserves between 1948 and 1957.

Within each group, some countries — such as Switzerland, Portugal, Venezuela, Iraq, Iran and Uruguay — persistently tend,

(21) See particularly pp. 17 and 19-20.

for a variety of reasons, to maintain relatively high reserve levels, while others — Norway, Denmark, Yugoslavia, Israel, Malaya, Canada and South Africa, for instance — seem to be stisfied with reserve levels well below 30 or even 20 per cent of imports (22).

VARIATIONS IN REGIONAL RESERVE LEVELS — TABLE II

	1928	1937	1948	1957
I. *In per cent of Imports*	43	109	89	55
A. Continental OEEC	46	78	40	42
B. Non-Industrial Areas	42	51	73	37
1. Latin America	47	51	44	41
2. Outer Sterling Countries	28	46	95	41
3. Other Countries (1)	50	67	74	30
C. Canada	7	21	33	29
D. United Kingdom	13	81	24	21
E. United States	85	358	303	161
II. *In per cent of World's Gross Reserves*	100	100	100	100
A. Continental OEEC	39	24	13	28
B. Non-Industrial Areas	25	14	28	21
1. Latin America	9	3	6	7
2. Outer Sterling Countries	6	5	16	8
3. Other Countries (1)	11	6	7	6
C. Canada	1	1	2	3
D. United Kingdom	6	15	4	4
E. United States	29	46	52	43

Footnote: 1. Including Japan.

Source: *International Reserves and Liquidity*, Appendix Table 1, pp. 100-101. Discrepancies between these estimates and the global estimates of Table I are due to minor discrepancies in the Fund's estimates themselves, but primarily to the exclusion of colonial territories from the present Table.

The differences in national conditions and policies reflected in these estimates are not as significant as would seem at first — and

(22) See *International Reserves and Liquidity*, pp. 46-55, and Table II in the text. Substantial reserve declines in the non-industrialized areas, however, occurred between the end of the war and 1948 and are not shown in the table.

as the Fund's study sometimes suggests (23) — for an appraisal of liquidity requirements for the world as a whole, under conditions of monetary convertibility. There are two reasons for this. The first is that few of the countries with persistently low reserves account for a significant proportion of total world trade, while most of the large trading countries traditionally hold reserves well in excess of 30 per cent. The second is that most of the countries with low reserves also maintain much more stringent trade and exchange restrictions than the others. Both of these facts will be brought out in Tables III and IV below. What they suggest is that:

1. some countries may indeed continue to hold relatively low reserves, but are also likely to have great difficulties in restoring and maintaining convertibility;

2. the maintenance of international convertibility, however, depends primarily on the policies of the major trading countries, and the avoidance of trade and exchange restrictions by them is clearly related to their ability to maintain adequate reserve levels (24);

3. the reserve requirements of the latter countries exercise an overwhelming influence — as compared to those of the smaller trading countries — on the world demand for monetary reserves.

Table III classifies the sixty-two countries (other than the United States and the United Kingdom) for which reserves are reported by the Fund into three groups, on the basis of their average ratio of reserves to imports over the three most "normal" years of the postwar period, *i.e.* 1953-1955. The number of countries in each group is approximately the same, but those with reserves lower than 33 per cent of imports accounted for only one fifth of total imports, and for less than one tenth of total reserves. All of them, moreover, were characterized by much tighter trade and exchange restrictions than those applied by most of the countries with higher reserve levels.

(23) See, for instance, the comments on p. 73 of the Fund's study.

(24) Bilateralism will remain confined to a very minor portion of world trade at most as long as the United States, Canada and Western Europe — with which most of the other countries' trade also takes place — refuse to participate in bilateral agreements. The functioning of the nineteenth century gold standard depended essentially on the policies of the major trading countries, and was never endangered by the exchange rate instability of other countries, particularly in Latin America. The same would hold today for exchange restrictions outside Europe and North America.

TABLE III

AVERAGE RESERVE LEVELS, 1953-1955

(All countries, excluding the United States and the United Kingdom)

	Average Ratio of Reserves to Imports	Number of Countries	Proportion of Total Imports	Proportion of Total Reserves
I. *Reserves Below 33% of Imports:* Yugoslavia (6), Denmark (13), Norway (15), Paraguay (16), Bolivia and Chile (18), Peru and Spain (19), Haiti and Israel (21), Costa-Rica (22), Nicaragua and Iceland (23), Taiwan and South Africa (25), Malaya (26), Sweden (27), Syria and Finland (29), Colombia (31).	22 %	21	20 %	9 %
II. *Reserves from 33% to 50% of Imports:* Dominican Republic and France (33), Mexico, Korea and New Zealand (34), Philippines (35), Honduras and Ecuador (36), Brazil (37), Indonesia (38), Canada (39), Lebanon (40), Turkey and Belgium (42), Italy (43), Japan and Netherlands (45), Ireland (46), Vietnam (47), Venezuela (49), Guatamala and Salvador (50).	40 %	22	52 %	43 %
III. *Reserves above 50% of Imports:* Argentina (51), Ceylon and Austria (52), Germany (54), Panama (56), Greece (60), Australia (61), Burma (76), Cuba (78), Ethiopia (81), Iran (85) ,Thailand (89), Pakistan (101), Iraq (106), Uruguay (110), India (136), Egypt and Switzerland (137), Portugal (180).	81 %	19	28 %	48 %
Total	48 %	62	100 %	100 %

Source: *International Reserves and Liquidity*, Appendix Table 1, pp. 100-101.

The other forty-one countries accounted for 80 per cent of the total imports, and more than 90 per cent of the total monetary reserves, of the sixty-two countries taken together. They included all the European countries outside of Scandinavia and Iceland, and all the other countries with imports in excess of $1 billion a year,

except South Africa and Malaya. It is these countries' policies — and, of course, those of the United States and the United Kingdom — that will overwhelmingly determine the fate of the present convertibility experiment. These policies will be very largely influenced, in turn, by these countries' ability to preserve reserve levels sufficient to eschew unnecessary resort to trade and exchange restrictions. And it is the global level of these reserve requirements in relation to available supplies from gold production and other sources — primarily dollar and sterling balances — that will play a crucial role in determining the adequacy or inadequacy of world reserve levels for the maintenance of convertibility tomorrow.

Twelve of these forty-one countries accounted for about 60 per cent of the total imports of the sixty-two countries taken together, and for 65 per cent of their total monetary reserves. Their actual reserve ratios in each of the eight years 1950-1957 are shown in Table IV. Only in three cases did they fall below 20 per cent. Two

TABLE IV

EVOLUTION OF TWELVE MAJOR TRADING COUNTRIES' RESERVES, 1950-1957

(percentage ratio of reserves to imports)

	1950	1951	1952	1953	1954	1955	1956	1957	Number of cases		
									below 20%	20-32%	33% and above
Canada	55	44	42	38	43	37	31	29	—	2	6
Germany	10	15	31	52	58	53	65	75	2	1	5
France	44	20	23	24	32	44	24	13	1	5	2
Netherlands . . .	29	24	47	52	45	40	29	26	—	4	4
Belgium	38	40	42	44	41	40	35	33	—	—	8
Italy	59	46	39	39	43	46	41	42	—	—	8
Japan	58	46	54	37	43	54	47	24	—	1	7
Australia	92	47	52	93	61	39	49	68	—	—	8
Brazil	61	26	26	46	30	38	50	32	—	4	4
Switzerland . . .	150	120	138	150	141	124	107	98	—	—	8
India	172	105	102	146	137	127	80	43	—	—	8
Venezuela . . .	56	49	51	52	46	48	75	77	—	—	8
Total . . .									3	17	76

Source: *International Reserves and Liquidity*, Appendix Table 1, pp. 100-101.

of these refer to Germany in 1950 and 1951, before that country had emerged from the economic and financial prostration in which the war had left it. The third is that of France in the middle of a severe exchange crisis in 1957. In seventeen other cases, reserves were below 33 per cent of imports. Nine of those occurred in France and Brazil and were accompanied by severe exchange controls. In all seventy-six of the other cases observed, reserves were maintained throughout above 33 per cent of imports.

The overall record of these eight postwar years strongly suggests that most of the major countries would aim at maintaining a reserve level of not less than 40 per cent in most years, feel impelled to adopt severe readjustment measures, if this level fell below, let us say, 30 or 33 per cent, and consider themselves forced to adopt drastic measures of control in the face of any persistent or substantial contraction below that critical range (25). A 20 per cent level of gross reserves would be widely regarded as an absolute minimum, to be earmarked for rare emergencies such as the outbreak of war, or as necessary collateral for the negotiation of short or medium term loans abroad.

Under normal conditions, the actual amount of reserves in excess of 33 per cent held by some countries would far outweigh the deficiencies of other countries' reserves in relation to this level. There can be little doubt, therefore, that the 35 per cent average level reached in 1957 by all countries outside the United States and the United Kingdom was on the low side of any reasonable estimate of world liquidity requirements, and that any further contraction below that level would make it very difficult for a number of key countries to adhere firmly to the convertibility policies which they would otherwise be willing and eager to pursue.

If this conclusion is accepted, two further questions must be asked:

1. Is the prospective development and supply of reserves over the next few years likely to alleviate or intensify the present reserve shortage for countries other than the United States and the United Kingdom?

(25) The Fund's study (p. 48) also remarks that most industrialized countries "appear to have tried to achieve reserve ratios of between 30 and 50 per cent, or perhaps 40 and 50 per cent, in the sense that if reserves were below these levels they tried to increase reserves, and if reserves rose beyond some such level, they saw fit to adopt a more expansionary policy".

2. How should we appraise the present and prospective reserve position of the two center countries of the present gold exchange standard system, *i.e.* the United States and the United Kingdom?

The next sections of this paper will try to shed some light on these two problems.

V. Prospective Adequacy of Reserves over the Ten Years 1958-67

Prospective Reserve Needs.

The Fund's study on *International Reserves and Liquidity* calculates the growth of reserves which would appear necessary over the next ten years to prevent a further decline of world reserves in relation to world imports.

The Fund bases these calculations on the assumption of an average growth rate of 3 per cent a year. For the ten years 1957-66, world reserves would have to increase by $19 billion, as against rougly $7 billion expected from the monetization of new gold production and sales of USSR gold over this period. The Fund then proceeds to lower the required $19 billion to $8 billion by considering as unlikely any increase in the reserves of four high reserve countries, *i.e.* the United States, Germany, Switzerland and Venezuela. The minor gap thus left between the required growth of reserves and the amounts expected from new gold production and USSR sales should not cause any serious worry, as it may easily be bridged, and indeed more than bridged, by a further growth of foreign exchange reserves — primarily dollar balances — and by a possible decline in private gold and dollar holdings (26).

These optimistic conclusions are open to serious questions. First and foremost is the 3 per cent growth rate assumed as "normal" by the Fund. The data which underlie this assumption are presented on page 70 of the Fund's study, and are condensed here in Table V. They would hardly suggest a growth rate as low as 3 per cent. The general picture that emerges is rather one of an expanding growth rate of roughly 3 to 4 per cent in the rather depressed period of the 1880's and 1890's, of 4 per cent or more in the last decade preceding the first world war, and of 6 to 7 per cent a year both in the 1920's and in the post World War II period.

(26) See *International Reserves and Liquidity*, pp. 69-75.

TABLE V

AVERAGE ANNUAL RATES OF GROWTH OF TRADE AND MANUFACTURING, 1876-1957

(in per cent; compound basis)

	Trade		Manufacturing Activity
	Primary Products	Manufactured Products	
I. *During War Years and the 1930's Depression*			
A. From 1913 to 1920			− 1
B. From 1913 to 1921-25	− 1.5	− 2.6	0.3
C. From 1926-29 to 1931-35	− 1.9	− 5.7	− 1.5
D. From 1938 to 1948	0		3.7
II. *During "Normal" Peace-Time Years*			
A. From 1876-80 to 1901-05	3.3	2.8	4.1
B. From 1901-05 to 1913	3.5	4.7	4.2
C. From 1921-25 to 1926-29	6.3	7.1	6.8
D. From 1948 to 1956	7.5		6.1
E. From 1950 to 1956	6.5		5.7
F. From 1950 to 1957	6.3		5.1
G. From 1951 to 1957	5.4		5.0

Sources: Estimates for "normal" years are from the IMF study on *International Reserves and Liquidity*, Table 17, p. 70.

Estimates for war years and the 1930's depression have been calculated from the indices given in the original source (LEAGUE OF NATIONS, *Industrialization and Foreign Trade*, 1945, pp. 130 and 157) and quoted on p. 104 of the IMF study. Average rates of growth for these years are not shown separately in this study (except for 1938-1948) but merged into average rates over longer periods.

The 3 per cent rate assumed by the Fund becomes plausible only when "normal" peacetime experience is diluted with the abnormally low, and in fact predominantly *negative*, growth rates of wartime years and of the 1930's world depression. An expected adequacy of reserves based upon the assumption of a third world war or of another deep and protracted world depression is hardly encouraging as a guide to policy. The least that should be done, it seems to me, would be to present alternative calculations based on different rates of growth, ranging from, let us say, 3 to 6 per cent a year. This is done in Table VI, below (27).

(27) It might also be noted that all these calculations with reference to an assumed rate of *physical* growth leave aside the impact of price rises upon liquidity requirements. This is, of course, reasonable insofar as one should not plan to increase international liquidity in such a way as to facilitate or stimulate inflationary price increases. Yet, if such increases are not avoided in fact by the major trading countries, corresponding liquidity adaptations might be preferable to alternative adjustments such as gold revaluation or, certainly, a tightening of trade or exchange restrictions.

TABLE VI

INCREASE IN RESERVES CORRESPONDING TO VARIOUS RATES OF GROWTH

(in billions of U.S. dollars)

	at growth rate of			
	3 %	4 %	5 %	6 %
I. *Over the Ten Years 1958-1967*				
1. All Countries	18.5	25.8	33.7	42.3
2. Excluding United States, Germany, Switzerland and Venezuela	7.5	10.4	13.7	17.2
3. Including reconstitution of 40% reserve level by the U.K. and France	12.7	16.2	20.0	24.1
4. Per cent of (3) covered by assumed supplies from new gold production and USSR sales	55 %	43 %	35 %	29 %
II. *In 1967*, on basis of assumption (3) above				
1. In billions of U.S. dollars	1.0	1.5	2.0	2.6
2. Per cent covered by assumed supplies from new gold production and USSR sales	70 %	48 %	35 %	27 %

Sources:

1. Reserve estimates as of the end of 1957 are taken from the January 1959 issue of *International Financial Statistics* ($53,600 for all countries, $31,864 million for the United States, Germany, Switzerland and Venezuela taken together, and $3,149 million for the United Kingdom and France, leaving an initial shortfall of $3,883 millions of reserves for these two countries with relation to 40% of their 1957 import levels as estimated in the same publication).

2. The estimated increase in the world's monetary gold over the ten years 1958-1967 ($7 billion) is taken from the IMF study on *International Reserves and Liquidity*, p. 72.

A second source of underestimation in the Fund's calculations is the exclusion of high reserve countries — the United States, Switzerland, Germany and Venezuela — without any parallel upward adjustment for any of the low reserve countries. On the contrary, the Fund's study comments (p. 72) that "it may be doubted whether all other countries would in fact wish to increase their reserves su much". This statement is formally correct, but also highly misleading. While it is probably true that not *all* of these countries will increase their absolute amount of reserves suffi-

ciently to avoid a further decline in their already low reserve ratios, one would expect such declines to be far more than made up for by the reconstitution of adequate reserve levels by *some* at least of the countries which emphatically and rightly proclaim such an increase essential to enable them to achieve and consolidate a satisfactory rate of progress toward full currency convertibility.

Table VI adjusts the Fund's estimates for such an increase in the reserve levels of two countries only: France and the United Kingdom. The postulated increase in the reserves of these countries is one that would bring them to 40 per cent of imports. This would correspond, as of the end of 1957, to a $4,564 million reserve level for the United Kingdom and a $2,468 million reserve level for France. These figures may be compared with the $5 billion reserve level often mentioned as a target by the British in past convertibility discussions, and with the $2.1 billion reserve level actually reached by France in the closing months of 1955.

Even at the 3 per cent growth rate assumed by the Fund's study, prospective gold supplies from new production and USSR sales would cover only 55 per cent of liquidity requirements over the ten years 1958-67. This proportion would drop to 43 per cent at a 4 per cent growth rate, 35 per cent at a 5 per cent growth rate and 29 per cent at a 6 per cent growth rate. The maintenance of adequate reserve levels, under the above assumptions, would thus require increases of gold production, decreases in gold hoarding, or supplementary reserve supplies in forms other than gold, ranging from roughly $6 billion to $17 billion over the next ten years.

Prospective Supplies of Monetary Gold.

The Fund's estimate of a $7 billion increase in gold reserves over the next ten years rests on far more solid grounds than its estimate of future reserve requirements. It is based on a previous and excellent staff study (28), whose main conclusions are summarized in the first three columns of Table VII.

These estimates appear reasonable in the light of past experience. The probable value assigned to non-monetary uses of gold appears high at first view, but no longer does so when compared

(28) Oscar L. Altman, "A Note on Gold Production and Additions to International Gold Reserves", IMF *Staff Papers*, April 1958, pp. 258-288.

Table VII

SUPPLIES AND USES OF GOLD

(Yearly Averages, expressed in millions of U.S. dollars at $35 an ounce)

	Forecast 1957-67			Past Averages						
	Pessimistic	Optimistic	Probable	1952-1957	1945-1951	1939-1944	1934-1938	1929-1933	1914-1928	1890-1913
1. New Production (1) . .	1050	1150	1100	940	800	1090	970	780	670	520
2. USSR Sales	—(2)	200 (2)	100	110	10	30	-10	—	—	—
3. Total Supplies (1+2=4+5)	1050	1350	1200	1050	810	1120	960	780	670	520
4. Non-Monetary Uses (1)	*760*	*330*	*470*	*500*	*440*	*- 70*	*-310*	*480*	*280*	*220*
a. Arts and Industry .	210	130	170	210	180	100	100	100	140	130
b. Hoarding	450	200	300	290	260	-170	-410	380	140	90
5. Monetary Uses (1) . .	*390* (2)	*1020* (2)	*730*	*550*	*370*	*1190*	*1270*	*300*	*390*	*300*

(1) USSR included before 1934.

(2) Altman's study estimates USSR sales at $100 million throughout, and gives therefore a narrower range — $500 million to $920 million — for forecast additions to monetary gold.

Sources: These rough estimates have been pieced together from the following sources:

a. the International Monetary Fund: Altman's study quoted above; *International Reserves and Liquidity*; and the January 1959 issue of *International Financial Statistics*.

b. the statistical tables regularly published in the *Federal Reserve Bulletin*, and the article on *The Private Demand for Gold* in the September 1954 issue of the same Bulletin, pp. 935-944.

c. the estimates on private demand for gold, regularly published since the war in the *Annual Reports* of the Bank for International Settlements; and in the *Eighth Annual Report* (May 1938, p. 45) for the period 1931-1937.

d. the *Annual Report of the Secretary of the Treasury* for the fiscal year ended June 30, 1954, p. 294.

e. the various reports issued by the Gold Delegation of the Financial Committee of the League of Nations; and particularly in its *Interim Report* (1930), pp. 79-84, 90-94, and 114-117.

to past experience — outside the period of large-scale dishoarding which followed the revaluation of gold in the early 1930's (29) — if one takes into account the enormous increase in world incomes which has taken place since 1928. The figure given for artistic and industrial uses seems indeed exceedingly modest in the light of the League of Nations' estimates for the period 1891-1928. Overall non-monetary absorption ranged from 40 to 60 per cent of total production in every decade from 1850 to 1929. Mr. Altman himself suggests (p. 287) that from one third to one half of gold production may continue to be so absorbed in the future. Applied to the production forecasts of Table VII, this would put non-monetary absorption within a range of $380 million to $525 million, and the amounts left for monetary uses between $525 million and $970 million, with a probable value of maybe $750 million.

The most vulnerable part of these forecasts is that referring to USSR gold sales to the West. All estimates of USSR gold stocks, gold production and gold sales are, of course, highly conjectural. Mr. Altman quotes estimates of $7 billion for stocks, and of $600 million for current production in 1957. Even more conjectural is the course of future USSR policy with respect to gold sales in world markets. An aggressive use of Russia's gold resources to serve political or economic objectives would, of course, play havoc with all estimates regarding the prospective adequacy of future gold reserves.

Finally, a word may be added about another, equally conjectural hypothesis, *i.e.* the possible dishoarding of gold privately accumulated in the past. The study on *International Reserves and Liquidity* quotes (p. 66), without sources, estimates of private gold hoards "of the order of $10 to $12 billion, of which one half is held in Western Europe, and almost one third in France alone". Such estimates can only be pulled from a magician's hat, the magician being in this case the well-known gold and exchange broker, Mr. Franz Pick (30). This estimate may be compared with those pieced together in Table VIII from more official sources, and which suggest a figure of about $21 billion for "disappeared gold", but of only $8 billion for private gold hoards. The highly conjectural nature of these estimates, however, especially for the

(29) See below, pp. 37 and 38.
(30) See Mr. Altman's article, p. 286, footnote 57.

TABLE VIII

GOLD SUPPLY AND USES, 1493-1957
(in billions of dollars, at $35 per ounce)

	Production	Monetary Uses	Other Uses			Cumulative Amounts, at End of Period				
			Total	Arts and Industry	Hoarding	Gold Stock	Monetary Gold	Disappeared Gold		
								Total	Arts and Industry	Hoarding
1493–1849	5.2	1.8	3.4	2.6	0.8	5.2	1.8	3.4	5.2	1.8
1850–1869	4.3	2.7	1.6	0.9	0.7	9.5	4.5	5.0	3.6	1.5
1870–1889	3.7	1.4	2.3	1.8	0.5	13.2	5.9	7.3	5.4	2.0
1890–1913	12.5	7.2	5.4	3.2	2.2	25.7	13.0	12.7	8.6	4.1
1914–1928	10.0	5.8	4.2	2.1	2.0	35.7	18.8	16.9	10.7	6.2
1929–1933	3.9	1.5	2.4	0.5	1.9	39.6	20.3	19.3	11.2	8.1
Excluding USSR and other Eastern Europe, but including USSR Gold Sales						36.9	19.6	17.3	10.1	7.2
1934–1938	4.8	6.3	– 1.5	0.5	– 2.0	41.7	25.9	15.8	10.6	5.2
1939–1944	6.7	7.1	– 0.4	0.6	– 1.0	48.5	33.1	15.4	11.2	4.2
1945–1951	5.7	2.6	3.1	1.3	1.8	54.1	35.7	18.5	12.5	6.0
1952–1957	6.3	3.3	3.0	1.2	1.8	60.4	39.0	21.4	13.7	7.8

Notes: Sources for these highly conjectural estimates have given above, under Table VII. Post-1934 estimates are based on Federal Reserve, IMF and BIS reports and are probably reasonably accurate, except for the breakdown of "other uses", and for the *cumulative* estimates of production and "disappeared gold". These depend on a rough link over the years 1928-33 with previous estimates of the Gold Delegation of the League of Nations and on the validity of these estimates with respect to gold production for earlier years. Russian gold output up to the end of 1929 was estimated by Kitchin at £389 million (*Interim Report of the Gold Delegation*, p. 56), or about $3.2 billion in present day dollars, while our table would imply a figure of only $2.7 billion up to the end of 1933. Monetary gold estimates for earlier years include highly uncertain estimates for gold in circulation outside Central Banks and Treasuries. The figures given in the source for pre-1930 gold hoardings refer to gold hoardings in India, China and Egypt.

earlier years, deprives them of any real significance for policy. The cumulative estimates for gold hoarding in recent years are probably somewhat better, although still very far from reliable. They would suggest an increase of gold hoards of the order of $3 billion to $4 billion between 1913 and 1933, a decrease of about $3 billion between 1933 and 1944, and an increase of approximately $4 billion between 1944 and 1957.

A new wave of dishoarding, similar to that of the 1930's might possibly reduce somewhat the prospective gap between gold production and reserve requirements over the next ten years. The total amount that could realistically be expected from this source, however, would be small at best. The only case on record in the past is that of the 1930's, triggered off by a major depression and by drastic and widespread currency devaluations. Other solutions to the gold shortage problem would certainly seem to be highly desirable.

The Role of Foreign Exchange Reserves.

Foreign exchange holdings have become, in recent years, a far larger source of current additions to world liquidity than gold itself. The Fund's study on *International Reserves and Liquidity* (pp. 72-73) recalls that " all short-term dollar balances in the last decade... increased on the average by $770 million per year, and official balances alone increased by $650 million per year. Sterling balances in the past decade have naturally been reduced from the swollen heights they attained by the end of World War II... When all kinds of exchange holdings are taken together, the available data suggest that these reserves increased by a net total of about $2 billion in the past decade, or by $200 million per year ".

These facts are not in doubt, and confirm indeed the view that gold has long ceased to provide an adequate supply of international liquidity for an expanding world economy. More than half of the world's liquidity requirements have been derived in recent years from the enormous growth of foreign exchange reserves, and particularly of dollar balances, alongside with gold itself. The implications of this trend for the future stability of the world monetary system are, however, extremely disquieting.

The increase of monetary reserves outside the United States has roughly kept pace, since the end of 1949, with the expansion

of these countries' trade. Their growth over the eight years 1950-1957 has proceeded at an average rate of about 5½ per cent a year, *i.e.* close to the maximum rate envisaged in Table VI, above. Of this overall increase of $10.9 billion, however, a little more than a third (36 per cent) was fed from current gold production and USSR sales, and nearly two thirds (63 per cent) was derived from a continuous decline in the United States net reserves (31).

TABLE IX

SOURCES OF INCREASE IN MONETARY RESERVE OUTSIDE THE UNITED STATES, 1950-1957

	In millions of US dollars	In % of total
Total Increase, from:	10,936	100
1. *Decrease in US Net Reserves*:	6,851	63
a) Decrease in Gold Assets	1,706	16
b) Increase in Dollar Reserve Liabilities	5,145	47
2. *Increase in World's Gold Reserves*	3,915	36
a) New Gold Production Outside Soviet Bloc	7,342	67
b) USSR Sales	635	6
c) Non-Monetary Absorption (—)	− 4,062	− 37
3. *Other*	170	1
a) Sterling Balances	− 1,578	− 14
b) Claims on EPU-BIS	1,570	14
c) Increase in International Organizations' Gold Assets (—)	− 80	− 1
d) Other and Errors	258	2

Sources:

1. Gold production and gold reserves are taken or calculated from *Federal Reserve Bulletin estimates*, and USSR sales from the *Annual Reports* of the Bank for International Settlements.

2. All other estimates are calculated from estimates in the January 1959 issue of *International Financial Statistics* (p. 17) and from *International Reserves and Liquidity* (p. 103).

This decline, in turn, did not, until very recently, give rise to any serious concern. First of all, the United States had emerged from the war with extremely high reserves, largely in excess of any conceivable need. A more even distribution of world reserves

(31) See Table IX.

was regarded as a necessary step toward the restoration of a viable system of international convertibility. Secondly, only a small portion of the United States loss of net reserves took the form of a drain on its gold holdings. These declined only by $1.7 billion, or about 7 per cent between the end of 1949 and the end of 1957. Foreign countries accumulated nearly half of their reserve increase in the form of dollar claims rather than of gold.

TABLE X

PROPORTIONS OF GOLD AND FOREIGN EXCHANGE TO TOTAL MONETARY RESERVES OUTSIDE THE UNITED STATES AND THE UNITED KINGDOM, 1913-1957

(in per cent)

	Gold	Foreign Exchange			
		Total	Dollar	Sterling	BIS-EPU
1913	84	16			
1928	62	38			
1932	87	13			
1937	79	21			
1938	82	18	5	13	
1947	35	65	8	57	
1948	33	67	13	53	
1949	41	59	15	42	1
1950	39	61	19	37	2
1951	41	59	18	35	4
1952	41	59	22	28	6
1953	41	59	24	28	7
1954	41	59	26	27	6
1955	42	58	28	24	5
1956	43	57	29	22	5
1957	45	55	27	21	6

Sources: See Table in Appendix.

The question at issue is how long such a trend can be expected to continue. Past experience is not reassuring in this respect. Foreign exchange holdings — primarily pounds and dollars — constituted at the end of 1957 about 55 per cent of the monetary reserves of countries other than the United States and the United Kingdom. Such a ratio does not appear excessive with reference to previous post-war years. Indeed, a substantially higher ratio (67 per cent) prevailed at the end of 1948, but most of it (53 per cent) was then in the form of inconvertible, and even partly blocked, sterling balances which could not be regarded as international monetary reserves in the full sense of the word.

The growth of foreign exchange reserves during and after World War II repeated, but on a much larger scale, their similar expansion after the first world war. Foreign exchange reserves had then risen from an estimated $500 million (16 per cent of total reserves) in 1913 to $3250 million (38 per cent of reserves) in 1928. This trend was encouraged by the international monetary conference of Genoa, in the spring of 1922, as a remedy to the shortage of gold. It was also propagandized throughout the 1920's by the United Kingdom, whose very low reserve position was considerably eased by foreign accumulation of sterling balances. The British return to convertibility in 1925 was thus assisted to a great degree by the maintenance of short-term balances by foreign countries in the London market.

This, however, also made the British position highly vulnerable as these short-term funds could move in and out under the stimulus of changes in relative interest rates in different monetary centers — particularly between London and New York — and of changes of expectations regarding the future evolution of exchange rates between London and other places.

The need to retain short-term funds in London by keeping higher discount rates in London than in New York was generally endorsed by Governor Strong of the Federal Reserve Bank of New York, and by the Governor of the Bank of England, Montagu Norman, but repeatedly gave rise to serious conflicts with other policy criteria in both countries. Unemployment and depressed levels of economic activities in England stimulated a clamor for easier credit policies, while credit restrictions were advocated in the United States as a necessary brake upon stock market speculation (32).

A temporary euphoria resulted, moreover, from the outflow of hot money from the continent during the years of currency

(32) See LESTER V. CHANDLER, *Benjamin Strong, Central Banker*, Brookings, 1958, Chapter VIII, pp. 291-331.

depreciation of the mid-1920's. The reversal of this movement was well-nigh inevitable at some point and created enormous embarrassment in London, particularly when the French franc began its spectacular recovery from 260 francs to the pound to 125 francs, after the accession to power of the Poincaré government. The Bank of France had to buy pounds massively from the market to slow down, and finally to arrest, the appreciation of the franc. The partial conversion of these balances into gold and dollars began the hemorrhage of reserves from London. The final blow came in the summer of 1931, when the development of the world crisis put into difficulties the Credit Anstalt of Vienna, triggering off a financial panic which spread rapidly throughout Central Europe and led to further and massive withdrawals of funds from London.

The devaluation of the pound, on September 21, 1931, sounded the knell of the gold exchange standard. The conversion of pounds into gold and dollars was accompanied and followed by similar conversions of dollars into gold. The foreign exchange component of the world's monetary reserves was nearly wiped out in the process, except for the countries of the sterling area. Dollar balances — official and private — fell from $2.7 billion in 1929 to less than $0.4 billion at the end of 1933.

Substantial exchange losses were experienced at that time, and once again in 1949, particularly by sterling holders. Some of the central banks concerned were reimbursed by special legislation, but saw their management sharply criticized in the course of the parliamentary debates to which this gave rise. This experience has not been forgotten and is likely to act as a brake on further accumulation of foreign exchange reserves beyond the swollen levels which they have already reached. Any drop in the interest rates available on such short term balances, or any impairment of confidence in the future stability of the center countries' currencies, would slow down further the accumulation of foreign exchange balances by central banks, and might even stimulate substantial conversions of existing balances into gold.

It seems most unlikely, therefore, that the growth of dollar or sterling balances can provide a lasting solution to the inadequacy of gold production to satisfy prospective requirements for international liquidity in an expanding world economy. The problem has been postponed in this manner after World War II, exactly as it was after World War I. Time, however, is running short, and

the danger is increasing daily that further inaction and complacency may lead to a repetition, in a different form, of the 1931 collapse of the gold exchange standard.

Before coming to such a conclusion, however, we should now turn to a brief examination of the reserve position of the two center countries of the present international monetary system, *i.e.* the United Kingdom and the United States.

VI. The Position of the Center Countries

The United Kingdom and Its Sterling Balances.

Sterling balances made up, at the end of the war, the overwhelming bulk of official foreign exchange holdings. They reached, according to the Fund's estimates (33), the equivalent of $12.1 billion at the end of 1947, *i.e.* 88 per cent of total official foreign exchange balances, as against 12 per cent for official dollar balances.

Total sterling balances, official and private, exceeded $14 billion, *i.e.* about 288 per cent of the United Kingdom's annual exports. Such huge balances would not, of course, have been accumulated during the war, and retained after the war, without a considerable element of compulsion. Large amounts of them were blocked by British regulations, and other holdings were subject to various degrees of restrictions on their use, ranging from full convertibility — but at the cost of severe import restrictions — for the insignificantly low balances held in the dollar area, to purely bilateral accounts in the case of countries outside the sterling and the transferable area systems.

The dismal failure of the brief 1947 convertibility experiment amply demonstrated the need for a substantial reduction — rather than further expansion — of sterling balances. The spectacular progress achieved in this direction in the following ten years was

(33) See, however, p. 21 above. Official sterling holdings at the end of 1945 were reported in *Economic Trends* (May 1958, p. viii) as equivalent to about $11 billion inclusive of British colonies, and $10 billion if colonies are excluded. No comparable figures are available for 1947. The total of sterling balances — official and private — declined only slightly — by about $280 million — between these two years, a total reduction of approximately $520 million in private and official holdings outside the British colonies being partly offset by the concomitant increase ($240 million) in colonial holdings.

a clear prerequisite for another, and less ephemeral, return to convertibility.

Measured in sterling terms, the overall reduction would seem very modest. Total non-territorial sterling balances fell only from 3.5 billion pounds in 1947 to about 3.1 billion pounds in September 1958. Moreover, a substantial portion of this decline is offset by increased sterling holdings of IMF and EPU, and by other short or medium term official British borrowings in the United States.

The improvement must indeed be measured in other ways. The actual burden of the sterling balances was, first of all, greatly reduced in dollar and in commodity terms by the sterling devaluation of 1949 and by a rise of more than 50 per cent in British export prices. The simultaneous expansion of nearly 80 per cent in export volume has also increased the normal demand for sterling balances. Thirdly, sterling balances held outside the sterling area have been more than halved, even in sterling terms, the largest part of this decline being accounted for, however, by a considerable increase in the more easily controllable holdings of colonial territories.

All in all, sterling balances today bear about the same relation to British exports as they did in 1938, and those held outside the sterling area represent only 20 per cent of annual imports, as against 44 per cent in 1938. Official balances of non-sterling countries were estimated in 1957 at less than $850 million, compared to more than $3.2 billion at the end of 1945.

Confidence in sterling has also increased considerably with other, and multiplying, signs of Britain's postwar recovery. The most striking of these are the increase in the United Kingdom's gold and dollar reserves since the end of 1957, and the large and growing surpluses on current account displayed by the balance of payments in 1957 ($0.9 billion) and in 1958 (more than $1 billion in the first half of the year only).

It is not unlikely, therefore, that the forthcoming months may witness a considerable demand for sterling balances by foreign countries. Sterling balances of non-sterling countries had indeed increased already by $325 million in the first nine months of 1958, previous to the convertibility decisions of the end of the year.

Further increases may be expected as a result of two features of the European Monetary Agreement which have not received all the attention which they deserve from economists and financial analysts. The first is that all OEEC countries are now free to accu-

TABLE XI

THE RESERVE POSITION OF THE CENTER COUNTRIES, 1928-1958

	1928	1932	1938	1947	1949	1953	1957	1958
I. *The United States*								
A. *Gold Reserves* ($billions)	4.1	4.0	14.6	22.9	24.6	22.1	22.9	20.6
B. *Dollar Balances* ($billions)	2.5	0.7	2.2	7.1	8.2	12.7	16.6	17.5
1. International	—	—	—	2.3	1.8	1.9	1.7	1.9
2. Countries:	2.5	0.7	2.2	4.9	6.4	10.8	14.9	15.6
a. Official			0.5	1.8	3.4	6.5	9.1	9.6
b. Private			1.7	3.0	3.1	4.4	5.7	5.9
C. *Ratio of Dollar Balances* (excl. Internat'l) *to U.S. Exports* (in per cent)	48	44	71	32	53	68	72	87
1. Official			16	12	28	41	44	54
2. Private			55	19	26	28	27	33
D. *Ratio of Total Dollar Balances to U.S. Gold Reserves* (in per cent)	61	17	15	31	33	57	72	85
II. *The United Kingdom*								
A. *Gold and Dollar Reserves* ($ billions)	0.7	0.6	2.9	2.2	1.8	2.5	2.4	3.1
B. *Sterling Balances* ($billions)	2.4	1.4	2.8	15.7	10.4	11.2	10.9	10.9
1. International	--	—	—	1.6	1.6	1.4	1.8	1.8
2. Countries	2.4	1.4	2.8	14.1	8.8	9.8	9.2	9.1
a. Colonies		0.7	1.6	1.9	1.5	3.1	2.5	2.4
b. Other Sterling Area				7.2	4.5	4.8	5.1	4.8
c. Non-Sterling Area		0.7	1.2	5.0	2.7	1.9	1.6	1.9
(1) OEEC				1.7	1.0	0.6	0.7	1.0
(2) Other				3.3	1.8	1.3	0.9	0.9
C. *Ratio of Sterling Balances* (excl. International) *to U.K. Exports* (in per cent)	69	108	104	288	127	131	94	97
1. Colonies		54	59	39	22	41	26	26
2. Other Sterling Area				147	65	64	53	51
3. Non-Sterling Area		54	44	102	39	25	16	20
a. OEEC				35	14	8	7	10
b. Other				67	25	17	9	10
D. *Ratio of Total Sterling Balances to U.K. Gold and Dollar Reserves*	320	240	95	705	595	440	460	355

Footnotes:

1. Official dollar balances include small amounts of "bonds and notes", reported only since 1949 and for which no breakdown is available between official and private holdings.

2. Sterling balance estimates for 1928 are from the (Macmillan) *Committee on Finance and Industry Report* (London, 1931), pp. 42 and 301. Those for 1932 are from the BIS study on *The Sterling Area* (Basle, 1953) and actually refer to the end of 1931. The 1938 estimate is taken from the *Twenty Second Annual Report* of the BIS (Basle, 1952), p. 172. These are probably fairly rough estimates, not fully comparable with postwar estimates as regularly published in *Economic Trends*.

3. Dollar balance estimates for the end of 1958 combine short-term liabilities as of the end of November with bonds and notes as of the end of September. Sterling balance estimates are as of the end of September.

mulate sterling reserves if they so wish, while they were debarred from doing this under the monthly compensation machinery of the EPU Agreement. The second is that such holdings will enjoy a firm exchange guarantee in terms of the U.S. dollar, under Article 11 of the European Monetary Agreement, while dollar holdings will not benefit from any similar guarantee in terms of sterling. Although any devaluation of the dollar with relation to sterling may now appear as a very remote and improbable contingency, this difference of treatment should not be entirely forgotten. More immediately significant, however, is the fact that European central banks are now free to accumulate sterling, if they so choose, without taking any exchange risk in the case of a devaluation of sterling with respect to the dollar. A substantial lowering of interest rates in New York compared to London might thus easily induce considerable shifts of short-term balances from dollar to sterling assets.

In spite of this, little reliance should be placed on the future growth of sterling balances to fill the prospective gap between gold production and world reserve requirements.

The main reason for this is that gross British reserves are still very low in relation to short-term sterling liabilities. The difficulties repeatedly encountered by Britain for that very reason, in 1931, 1947, 1949, 1951, 1953 and 1957 are likely to induce her to match any increase in sterling balances by equivalent, or more than equivalent, increases in her own reserve assets. Little net additions to world liquidity should, therefore, be expected from this source.

The United States and Its Dollar Balances.

The prospective growth of dollar balances offers, at first view, more promising possibilities. In spite of their enormous increase since the war, dollar balances still do not appear excessive in relation to United States exports. The ratio of the first to the latter (87 per cent) is only slightly larger than in 1938, and still well below the corresponding ratio for the United Kingdom (97 per cent). In sharp contrast to the British case, moreover, our gold stock is still substantially larger than our total short-term liabilities abroad.

It is indeed the persistent decline in our net reserve position which has been, by far, the major source of supply for the very

satisfactory growth of other countries' reserves since 1949 (34). This fact received little public notice as long as the drain on our reserves took the form of an increase in our short-term dollar liabilities abroad rather than in a loss of gold from Fort Knox. From 1949 to the end of 1957, our gold stock decreased only by $1.7 billion, or about 7 per cent, while our dollar liabilities more than doubled, from $8.2 billion to $16.6 billion.

This rapid growth of dollar balances during the postwar years reflected, at least in part, the substitution of convertible dollars for inconvertible sterling in world settlements and world reserves. This throws further doubt on the likelihood of any continued and indefinite accumulation of dollar balances abroad on a scale comparable to that experienced during the last decade. The prediction which I had ventured in this respect in the spring of 1957 (35) seemed to find some confirmation in 1958. In the first nine months of that year, foreign countries' short-term dollar holdings — including bonds and notes — rose by less than $300 million, while net gold purchases from the United States totalled $1,900 million, and climbed further to $2,300 million by the end of the year.

The United States gold losses of 1958 are beginning to create some concern about the continued deterioration in the country's net reserve position. The excess of gold reserves over short-term liabilities to foreign countries — including bonds and notes — has declined continually from $18.2 billion at the end of 1949 to $5.8 billion in September 1958, *i.e.* at an annual rate of more than $1.3 billion over the years 1950-1957, and of nearly $3 billion during the first nine months of 1958.

Such a movement obviously could not continue indefinitely without ultimately undermining foreigners' confidence in the dollar as a safe medium for reserve accumulation. The time will certainly come, sooner or later, when further accumulation of short-term foreign liabilities will either have to be slowed down or substantially matched by corresponding increases in our already bloated gold assets. If this were not done on our own initiative, foreign central banks would do it for us by stopping their own accumulation of dollar assets and requiring gold payment instead for their overall surplus with the United States.

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(34) See above, pp. 38-39 and Table IX.
(35) *Europe and the Money Muddle*, Yale University Press, 1957, p. 297.

As in the case of sterling balances, therefore, further increases in dollar balances cannot be relied upon to contribute substantially and indefinitely to the solution of the world illiquidity problem.

VII. The Gold Exchange Standard

Before discussing other possible remedies, it may be advisable to broaden our understanding of the problem by inserting it into a larger historical context. The problem indeed is not new, although it has manifested itself in many different forms in past history, and been solved in a great variety of ways.

It is not necessary to accept any rigid version of the quantity theory of money to recognize that some link has always existed between monetary expansion and economic growth. The link is a loose one, and does not in any way imply a simple causal relationship. Monetary expansion will not automatically ensure economic growth. It may, however, stimulate it. What is even clearer, and more relevant to the present discussion, is that economic growth is almost certain to be arrested or slowed down at some point if the way cannot be found to ensure a parallel — although by no means proportionate — increase in monetary liquidity.

Previous to the large-scale development of banking institutions in the nineteenth century, gold and silver remained for many centuries the main source of supply of new money in the West. Their relative abundance or scarcity could not fail to play an important — although neither decisive nor exclusive — role in the evolution of prices and of economic activity. Every economic historian has stressed, for instance, the impact exercized in this respect by the influx of gold and silver into Spain and into Europe following the discovery of America. Long waves of economic activity in the nineteenth century — the so-called Kondratieff cycles — have similarly been related by many economists to the uneven pace of gold discoveries and production. Economists, however, are prone to stress the originality, rather than the conformism, of their views, and to emphasize the differences of interpretation that distinguish them from their colleagues, rather than the common ground on which they would all meet. Their basic agreement on the points mentioned above is thus often veiled by controversies over the relative weight to be given, in the analysis of events, to monetary

and real factors and over the "causal" direction which runs between the first and the latter. We are here, however, looking at the forest rather than at the trees, and these differences do not invalidate the broad conclusion that a lag in monetary expansion may act at times — and often has acted in the past — as a brake on the rate of economic development.

For many centuries, the repeated debasement of coinage constituted the main escape from the difficulties resulting from the failure of gold and silver supplies to keep pace with the monetary needs of individual countries (36). The stability exhibited by the major Western currencies with respect to gold throughout the nineteenth century was unprecedented in history. It was largely the product of an enormous expansion in gold production and of the large-scale development of paper currency and deposit-money as adjuncts to gold and silver in monetary transactions.

These new forms of money, however, were now national, rather than international, and the maintenance of exchange rate stability became dependent on their convertibility into internationally acceptable money by the issuing institution. The incidence of this on the problem of international reserves has already been traced in the earlier sections of this study. All that we need observe at this stage is the economy in the use of scarce gold supplies which was effected by the gradual shift of gold coin from circulation in the public to the reserves of the banking system and, later on, from private circulation and bank reserves to the reserves of a single national institution, *i.e.* the Treasury or Central Bank. The latter phenomenon was one of the three major remedies applied to the shortage of gold reserves in relation to the vastly expanded circulation of national paper money and bank deposits during and after the first world war. Gold reserves nearly doubled between 1913 and 1928, passing from $4.9 to $10.0 billion — including Russian gold — but of this total increase of $5.1 billion less than half ($2.3 billion) was derived from the excess of new gold production over non-monetary absorption, and about 55 per cent ($2.8 billion) from the contraction of monetary gold outside Treasuries and Central Banks.

(36) The gold content of the French "livre tournois" gradually fell, for instance, from about 3.2 grams of fine gold in 1351 to 0.29 grams in 1795, *i.e.* a debasement of more than 90 per cent. The fine gold content of British coinage fell somewhat less, by 77 per cent, between 1257 and 1816.

The second remedy lay in the drastic devaluation of many currencies with respect to gold, and to the consequent revaluation of gold reserves in terms of national currencies.

These two categories of measures did not succeed in restoring fully the prewar proportion of gold reserves to the currency issues and other sight liabilities of central banks. The ratio of the first to the latter dropped from 48 per cent in 1913 to about 40 per cent in the late 1920's (37).

The third remedy resorted to during this period was, as already noted in previous sections of this paper, a much wider reliance on national key currencies — primarily sterling and dollars — as additional components of world monetary reserves. By combining the above estimates with the IMF estimates of foreign exchange reserves ($500 million in 1913 and $3,250 million in 1928) one arrives at a ratio of total reserves to sight liabilities of 53 to 54 per cent, both in 1913 and 1928.

Such world averages, however, concealed wide variations in the reserve position of individual countries. Approximately half of the world's reserves were concentrated in 1928 in two countries only, France and the United States, while the gold reserves of the Bank of England ($750 million) were less than a fourth of sterling deposits and bills held or accepted in London on foreign account (38).

The increasing use of foreign exchange balances as a remedy to world illiquidity under the new gold exchange standard had thus fatally weakened the reserve position of the country on which the system was primarily dependent for its continued operation. The collapse of the major key currency of the system in 1931 inevitably sucked other currencies in the whirlpool, and entailed the temporary breakdown, not only of sterling, but of the international monetary system itself.

An unprecedented degree of international liquidity was nevertheless reached in the 1930's, in spite of the near-disappearance of the foreign exchange component of world reserves. This, however,

(37) *Interim Report of the Gold Delegation of the Financial Committee* (League of Nations, Geneva, 1930), p. 94.

(38) Expressed in pounds sterling, the gold reserves of the Bank of England at the end of 1928 were about £154 million. Deposits and sterling bills held in London on foreign account — including advances to the discount market — totalled £500 million. Acceptances on foreign account totalled another £200 million. See the (Macmillan) *Committee on Finance and Industry Report*, London, 1931, p. 301.

came as the by-product of widespread currency devaluation and, most of all, of a drastic and prolonged contraction in the volume and value of world trade. Deflation, devaluation and restrictions were the three sources of the unwanted levels of international monetary liquidity of the 1930's. They also reflected, at least in part, the vulnerability imparted by the gold *exchange* standard to the monetary centers of the system and transmitted through them to the world monetary system itself.

The basic absurdity of the gold exchange standard is that it makes the *international* monetary system higly dependent on individual countries' decisions about the continued use of one or a few *national* currencies as monetary reserves. In the absence of any widespread doubts about exchange rate stability, the choice of such currencies as reserves normally falls on the currencies of the countries which play a major role in world trade and finance. Sterling, the dollar and, subsidiarily, the French franc thus became the main reserve currencies in the 1920's. When doubts about the future stability of exchange rates begin to develop, however, the weaker currencies quickly tend to be eliminated from this competition, and the choice of reserve currencies narrows down to the strongest, hardest, and thus safest, currencies in world trade and settlements. When even these begin to be questioned, a further shift to gold may bring the gold exchange standard to an end and move the world back toward the previous gold, or gold bullion, standard.

The gold exchange standard *may*, but *does not necessarily*, help in relieving a shortage of world monetary reserves. It does so only to the extent that the key currency countries are willing to let their *net reserve* position decline through increases in their short-term monetary liabilities unmatched by corresponding increases in their own gross reserves. If they allow this to happen, however, and to continue indefinitely, they tend to bring about a collapse of the system itself through the gradual weakening of foreigners' confidence in the key currencies.

This happened to the United Kingdom in 1931. The collapse was then brought about by large shifts of sterling balances into gold and dollars, leading to the devaluation of sterling. It happened again as a consequence of wartime developments and resulted then both in the 1949 devaluation and in the protracted inconvertibility of sterling and recurring balance of payments crises of Britain throughout the postwar years.

This explains the division of views which has developed in recent years in the United Kingdom about the relative advantages and disadvantages flowing to its own economy from the wide use of sterling as an international currency (39). It may also help explain why other countries, such as Switzerland and Germany, have tried so far to discourage, rather than welcome, the use of their national currency as international reserves.

The weakening of the sterling position, and of other major world currencies, after World War II concentrated the choice of all countries upon the United States dollar as the hardest, and thus safest, medium for the investment of their foreign exchange reserves. It brought coal to Newcastle in the form of "unrequited" lending by the rest of the world to the main creditor country. This added to the difficulties which the United States already confronted in developing a sufficient level of *net* capital exports to finance its large surpluses on current account and avoid an aggravation of the dollar shortage.

To the extent that we succeeded in doing this, however, we also tended, inevitably, to adjust our overall balance of payments on current and U.S. capital account — including official grants and loans — to the persistent inflow of foreign short-term balances into our market, and to weaken correspondingly our net reserve position to a point beyond which neither we, nor probably foreign countries, would wish to venture much further. As we have already seen, the mere slowdown of this foreign capital inflow resulted in 1958 in a relatively large gold outflow. If the latter persists, or reasserts itself at a later date, we shall have to undertake some complex readjustments in our economic policies, in order to restore long-run equilibrium in our international transactions.

The relatively small role of external transactions in relation to GNP, and the enormous strength and resiliency of our economy, should facilitate these necessary readjustments, and rule out difficulties of the kind previously encountered by Britain. Only an incredible complacency on our part could bring us to the point where the weakening of our reserve position might finally stimulate massive conversions of foreign countries' existing dollar balances into gold, and force us to suspend or modify the legal gold cover requirements of the Federal Reserve System. Even this could, in

(39) See particularly A. C. L. Day, *The Future of Sterling*, Oxford Press, 1958.

any case, be done easily if economic considerations did not risk, at that stage, to be overshadowed by irrational, but powerful, psychological and political forces. Is it too fanciful to imagine that the Daughters of the American Revolution might then clamor for an embargo on gold sales or shipments abroad, and that the threat of any such action might precipitate the conversion of existing dollar balances into gold and force the authorities to resort to such drastic measures, no matter how unnecessary these would have been in a calmer environment? A gold embargo would, however, entail nearly inevitably — even if only temporarily — a *de facto* depreciation of the dollar with respect to gold. Other currencies would probably find themselves involved in the process, as any expectations of a dollar depreciation in relation to gold would almost certainly be accompanied by expectations of a similar depreciation of other currencies, and would prompt legal or illegal flights into gold or real assets, abroad even more than in the United States.

I do not wish to suggest that such dramatic developments are in the least probable. They are, on the contrary, totally unlikely to occur. The United States authorities are well aware of the problem and determined to tackle it long before the danger point is reached. The real danger which we face is not that of a dollar collapse. It is the fact that such a collapse can ultimately be avoided only through a substantial slowdown of the contributions to world liquidity derived in the last nine years from the persistent weakening of our net reserve position. The solution of the dollar problem will thus involve a reopening or aggravation of the world liquidity problem.

VIII. Summary and Conclusions

The world's normal requirements for monetary reserves appropriate to the maintenance of convertibility by major trading countries are likely to exceed considerably — by $5 billion to $15 billion — over the next ten years the contribution which may be expected for that purpose from current levels of gold production (40).

(40) Including about $200 million a year of Russian gold sales to the West. The conclusions of this paper would, I must admit, be thoroughly upset if the USSR decided to use aggressively its vast gold stock in world markets, for economic or political purposes. Depending on the policies adopted on both sides of the famed iron curtain, this could either save or definitely wreck the gold standard as an international monetary mechanism.

This gap is unlikely to be filled by the supplementary contributions to world liquidity that may be derived from the further growth of dollar, sterling, and other national currency balances as media for reserve accumulation.

In the absence of any specific planning and policies, the growing inadequacy of world reserves would be most likely to lead, within a relatively short span of years, to a new cycle of international deflation, devaluation and restrictions, as it did after 1929. Such a cycle might possibly be triggered off by unfavourable economic developments outside the center countries themselves, but its international spread would begin with the difficulties which the United States or the United Kingdom might experience as a result of any considerable slowdown or reversal of the inflow of foreign funds to their markets. The lessons of the 1930's and the radical changes which have taken place since then in governmental attitudes and policies would probably rule out any widespread recourse to, or acceptance of, internal deflation as a method of adjustment. Devaluation and restrictions would be the most likely outcome of such a situation.

Fortunately, a sufficient number of people are now alert to these dangers, and we have witnessed during the last year some modest beginnings toward advance planning in this field. The proposed expansion of the International Monetary Fund's quotas by 50 per cent, and of the International Bank's capital by 100 per cent are steps in the right direction. A less publicized, but important feature of the European Monetary Agreement is the exchange guarantee provided by it on all balances held by any participating country in the currency of any other participating country. This provision may indeed encourage a broader use of European currencies — and particularly sterling — as reserves by the countries concerned. Finally, the implementation of the provisions of the European Economic Community Treaty relating to coordination of economic and monetary policies and the adjustment of balances of payments within the Community may also lead to fruitful developments in the future.

Far more comprehensive measures than those adopted so far remain necessary, however, to adapt the old gold and gold exchange standards to the needs of our times and to provide the world with a viable framework for international payments in an expanding world economy. The most promising line of approach to a long-

term solution of the problem lies in the true "internationalization" of the foreign exchange component of the world's international reserves, protecting the world monetary system from the instability resulting from arbitrary shifts from one reserve currency into another or into gold. Such a solution should be regarded as the normal culmination of one of the techniques used in the past to adjust the monetary system to the requirements of an expanding economy, *i.e.* the gradual withdrawal of gold coin from active circulation, and its concentration into the monetary reserves of national central banks. Its adoption can also develop only gradually at best, and premature or overambitious plans such as embodied in Keynes' famous *Proposals for an International Clearing Union* would be doomed to failure today, as they were in 1943.

It is to be hoped, however, that more modest and feasible agreements may prove negotiable in time, both regionally and internationally. Three institutions should normally take the lead in this respect: the European Economic Community, the Organization for European Economic Cooperation, and the International Monetary Fund. The possible scope and line of action of each will be discussed in a forthcoming article in this Review.

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APPENDIX

BASIC ESTIMATES FOR RESERVE CALCULATIONS, 1913-1957

(in billions of U.S. dollars)

	1913			1928			1932	1937	1938	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957
	Reserves	Gold Circulation	Total	Reserves	Gold Circulation	Total														
I. *Gold*	4.03	3.57	7.60	9.76	1.04	10.80	11.35	25.31	25.95	32.40	32.75	33.15	33.83	33.94	33.94	34.37	34.98	35.46	36.10	37.36
A. United States	1.29	0.63	1.92	3.75	0.40	4.15	4.05	12.79	14.59	22.87	24.40	24.56	22.82	22.87	23.25	22.09	21.79	21.75	22.06	22.86
B. Other	2.74	2.93	5.68	6.01	0.64	6.65	7.30	12.52	11.36	9.53	8.35	8.59	11.01	11.07	10.64	12.28	13.19	13.71	14.04	14.50
1. United Kingdom	0.17	0.60	0.77	0.75	0.09	0.84	0.58	4.14	2.88	2.02	1.60	1.35	2.90	2.20	1.50	2.30	2.55	2.05	1.80	1.60
2. Other	2.58	2.33	4.91	5.26	0.55	5.81	6.72	8.38	8.48	7.51	6.75	7.24	8.11	8.87	9.19	9.98	10.64	11.66	12.24	12.90
II. *Foreign Exchange*	0.50			3.25			1.00	2.26	1.80	13.90	13.90	10.85	13.70	13.15	13.58	14.62	15.55	16.02	16.70	16.24
A. United Kingdom	—			—			—	—	—	0.21	0.40	0.40	0.77	0.17	0.46	0.25	0.25	0.11	0.37	0.77
1. Dollar	—			—			—	—	—	0.06	0.25	0.34	0.40	0.13	0.35	0.22	0.21	0.07	0.33	0.67
2. EPU-BIS	—			—			—	—	—	—	—	—	0.23	—	—	—	—	—	—	—
3. Discrepancy	—			—			—	—	—	0.15	0.15	0.06	0.14	0.04	0.11	0.03	0.04	0.04	0.04	0.10
B. Other	0.50			3.25			1.00	2.26	1.80	13.69	13.50	10.45	12.93	12.98	13.12	14.37	15.30	15.91	16.33	15.47
1. Dollar									0.50	1.79	2.65	2.71	4.05	3.91	4.90	5.83	6.84	7.80	8.22	7.53
2. Sterling									1.30	12.15	10.77	7.41	7.78	7.65	6.33	6.83	6.98	6.59	6.22	5.84
3. EPU-BIS										—	0.05	0.11	0.43	0.86	1.44	1.62	1.57	1.41	1.51	1.68
4. Discrepancy										−0.25	0.02	0.21	0.67	0.56	0.45	0.09	−0.09	0.11	0.38	0.43
III. *Total*	4.53	3.57	8.10	13.01	1.04	14.05	12.35	27.57	27.75	46.30	46.65	44.00	47.53	47.09	47.53	49.00	50.53	51.48	52.80	53.60
A. United States	1.29	0.63	1.92	3.75	0.40	4.15	4.05	12.79	14.59	22.87	24.40	24.56	22.82	22.87	23.25	22.09	21.79	21.75	22.06	22.86
B. Other	3.24	2.93	6.18	9.26	0.64	9.90	8.30	14.78	13.16	23.43	22.25	19.44	24.71	24.22	24.28	26.91	28.74	29.73	30.74	30.74
1. United Kingdom	0.17	0.60	0.77	0.75	0.09	0.84	0.58	4.14	2.88	2.23	2.01	1.75	3.67	2.37	1.96	2.55	2.80	2.16	2.17	2.37
2. Other	3.08	2.33	5.41	8.51	0.55	9.06	7.72	10.64	10.28	21.20	20.24	17.69	21.04	21.85	22.32	24.36	25.94	27.57	28.57	28.37
IV. *Imports*			21.0			30.6	12.71	27.62	23.54	53.30	60.05	59.91	59.34	81.40	80.20	76.57	79.61	88.98	98.21	107.39
A. United States			1.8			4.4	1.34	3.57	2.46	6.55	8.06	7.53	9.60	11.88	11.66	11.79	11.05	12.37	13.80	14.17
B. Other			19.2			26.2	11.37	24.05	21.07	46.76	52.00	52.38	49.74	69.52	68.53	64.78	68.56	76.61	84.41	93.22
1. United Kingdom			3.7			5.8	2.28	5.08	4.50	7.34	8.37	8.52	7.31	10.93	9.74	9.36	9.45	10.87	10.88	11.41
2. Other			15.5			20.4	9.09	18.97	16.57	39.42	43.63	43.86	42.43	58.58	58.80	55.42	59.11	65.74	73.53	81.80
V. *Gross Reserve Ratio* (%)	22	17	39	43	3	46	97	100	118	87	78	73	80	58	59	64	63	58	54	50
A. United States	72	35	107	85	9	94	302	358	592	349	303	326	238	193	199	187	197	176	160	161
B. Other	17	15	32	35	2	38	73	61	62	50	43	37	50	35	35	42	42	39	36	33
1. United Kingdom	5	16	21	13	1	14	26	81	64	30	24	21	50	22	20	27	30	20	20	21
2. Other	20	15	35	42	3	44	85	55	62	54	46	40	50	37	38	44	44	42	39	35

Sources and Footnotes:

1. Most of these estimates are derived from IMF gold, foreign exchange, and trade statistics, and exclude International Organizations and the Soviet Area countries.

International Financial Statistics' most recent (February 1959) Tables have been used for the years 1937 and 1950-1957; Appendix Table 3 of *International Reserves and Liquidity* for foreign exchange estimates for the years 1947-1949; and Appendix Table 2 of the same study for gold estimates for 1947-1949, and for both gold and foreign exchange estimates for 1938.

2. Other sources were used to check and complete the estimates for 1913, 1928, and particularly 1932. Preference was given for this purpose to the gold reserve statistics of the Federal Reserve *Banking and Monetary Statistics* (Washington, 1943), pp. 544-555, and to the estimates of gold circulation of the *Gold Delegation of the Financial Committee of the League of Nations* (1930 *Interim Report*, pp. 114-117 for 1913, and the 1932 *Report*, pp. 78-83 for 1928). Foreign exchange estimates for 1932 had to be pieced together from other League of Nations publications (particularly Ragnar Nurkse's *International Currency Experience*, League of Nations, 1944) and can only be regarded as a rough approximation.

3. Slight differences in the inclusiveness of estimates covering such an extended period of time are well-nigh unavoidable and introduce a corresponding margin of error in all calculations based on this Table, particularly for the years 1913-1949.